HYPERTEXT AND ETHNOGRAPHIC REPRESENTATION:

A CASE STUDY

by

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STATEMENT OF DISSERTATION APPROVAL

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ABSTRACT

This study explores the ways in which ethnographic data might be represented within a hypertext format. It begins with an analysis of the historical roots of the technology to determine key characteristics that differentiate it from other media. Three characteristics surface through this analysis: multilinearity, multivocality, and multimodality. The current study examines these characteristics from a more critical stance to determine what is possible in practice.

To this end, three ethnographic hypertexts are analyzed to determine strengths and weaknesses. From this analysis, a set of design implications emerge that provides a framework for a case study entitled *The Congo Prototype*.

The Congo Prototype is built from an extensive study of a museum located in Belgium, *The Royal Museum for Central Africa* (RMCA), along with interviews with colonial veterans who served in the Congo up until Independence. This work offers the reader specific techniques that might be incorporated into future works, and at the same time, provides a stand alone ethnographic study of numerous narratives revolving around the Belgian Congo.

In the final sections of this dissertation, several suggestions are outlined for future research. It is suggested that practitioners might consider database driven ethnographies as a means of creating a more dynamic reading experience; cross linked studies to achieve a higher degree of multivocality; and integration of a "play around" feature that

would allow readers to determine the amount of data that could be viewed in support of specific claims.

The study concludes with a brief discussion of some of the intractable issues that cannot be solved through technological means, such as the crisis of representation, the importance of being in the field, and the politics of web publishing.

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INTRODUCTION

Early Experiences with Hypertext: Seeds of the Study

Before entering a PhD program in Communication, I completed an EdS in Instructional Technology, with an emphasis in the design and development of interactive products, as well as earned an MFA in filmmaking. Both of these previous degrees helped me to hone my skills as a creative practitioner. A PhD in Communication seemed like a natural way that I might augment these early interests with additional scholarly training. As I began my doctoral studies, I found the theoretical readings to be fascinating, yet I longed for an approach to scholarship in which I might spark some synergy between my three related chosen areas of study. To some extent, this dissertation represents the overlap between these disciplines.

Luckily, I found myself at the University of Utah, where interdisciplinary work is encouraged, if not required. By way of example, I offer the following short anecdote as context for the current study and as a means of outlining the problems I hope to address.

During an early foundations class, Professor James Anderson suggested that we expand our notions of what constitutes scholarship. In response, my student colleagues and I planned to create a visual ethnography, one that would highlight the ways in which four-wheel drive enthusiasts perform environmentalism.

We had recently learned of a monster truck rally at a local racetrack, and so on a warm weekend in September, we borrowed several video cameras from the production

lab and attempted to produce the kind of scholarship to which Dr. Anderson had alluded. For hours, we trained our cameras on loud, roaring engines, spinning wheels, and "tricked out" trucks. At the end of a long, exhausting weekend, we had filled a dozen tapes with what we hoped would prove to be useful data.

As we reviewed the tapes, it seemed that each member of our team, which included an environmentalist, feminist, and a queer theorist, had a different sense of what we had just witnessed. The environmentalist observed the ways in which the large wheels left deep scars across the hillside, the feminist noted the lack of female drivers within the competition, and the queer theorist expressed concern over the heteronormative speech patterns, as voiced by the local crowd. Suddenly, theoretical notions of multivocality, as suggested within recent approaches to ethnography (Pink, 2007; Ruby 2005), became less ethereal and much more concrete. As we struggled to draft the first version of our essay, we realized that it would be quite difficult to create a coherent document. Our professor recommended that we consider a web-based document, one that could showcase our video footage.

I had hoped that our collaboration might help us to address issues of representation in new ways. This is certainly not a unique claim. Numerous authors make the same sort of assertion (Coover, 2003; Dicks, Mason, Coffey, & Atkinson, 2005; Pink, 2007; Ruby, 2005), yet what our team discovered was that technology is not an ethnographic panacea. Instead, it simply afforded us a *different* way to present data from the field.

In our naiveté, we assumed that it would be possible to create a document in which each of us would be given equal opportunity to express our ideas. Yet as the project developed, the voice of the web designer, who had control over which clips would be

included and how the document would be organized, had more power to shape the project than any of the other members of our team. Consequently, his voice came to the forefront as the rest of the voices became somewhat muted.

As an experiment in multivocality, we probably achieved less than we had hoped; yet as a way to combine scholarly and creative work, I had found a new platform of expression. I was hooked. Without a clear understanding of where this initial foray into ethnographic hypertext would lead, two central research threads grew out of the experience: first, a desire to produce alternative forms of scholarship, and second, an equally important desire to understand the strengths and limitations of technology as a means to convey ethnographic discourse.

From our multivocal experiment, we learned that it is far easier to theorize about ethnographic hypertext than it is to actually build one. To date, there exists a large gap between hypertext theory and ethnographic practice (Ruby, 2005). The current study seeks to bridge this void by answering four central questions. They are:

RQ 1: What characteristics differentiate hypertext from print-based documents?

RQ 2: How have the unique characteristics of hypertext been utilized as a response to the crisis of representation?

RQ 3: How can those features be applied to a specific case study involving multiple media and multivocal texts within a working prototype?

RQ 4: What are the advantages and limitations of hypertext approaches given the demand to "render sensible" the ethnographic resources of the case study?

CHAPTER 1

LITERATURE REVIEW

Hypertext: A Brief and Select History

Hypertext documents exhibit several unique characteristics that may provide useful tools for the representation of ethnographic data, including multilinearity (Pink, 2007), multivocality (Landow, 1992), and multimodality (Coover, 2004). Before one can fully appreciate these characteristics, it is important to understand how hypertext technology has evolved from the science fiction musings of a post-World War II nuclear scientist to the ubiquitous network that has become the World Wide Web. The following select chronology traces those key events and theorists that have contributed to the development of ethnographic hypertexts.

Early Concepts of Hypertext: Bush, Nelson, and Landow

Vannevar Bush has long been considered the father of hypertext, and it is through his early designs that many of the core concepts of the technology originated. In his seminal article entitled *As We May Think*, Bush (1945) outlined what he perceived to be the most pressing issue facing humankind, the exponential growth of information. As a response, he suggested that the scientists of his day should explore more efficient ways to catalog and access the growing collection of scholarly research. As a preliminary step, Bush (1945) wrote about an imagined desktop workstation called the *Memex*. With prophetic

accuracy, he explained how future hypertext systems could be used to connect a variety of data types (textual and pictorial) in patterns he termed "trails." Each of these trails could then be saved and shared between scholars. Additionally, Bush (1945) believed that with the *Memex*, information could be connected in ways that went beyond hierarchies, as appear within printed documents. Instead, he felt that it should be accessed in the same way that the human brain operates, which for Bush (1945) meant by association.

Building upon Bush's (1945) ideas, Ted Nelson (1965) coined the term "hypertext," which he believed would allow the writer to represent concepts that could not be conveniently presented on paper, such as interactive maps, diagrams, and simulations. As with Bush (1945), he thought that the user should have a degree of freedom to choose these materials in a unique order, rather than a predefined structure. Nelson (1981) suggested that multilinear access would have profound effects on numerous fields, but would have particular relevance within educational settings in which students might explore information, as interest would dictate, rather than the traditional process of rote learning.

Even at this early date, two of the core characteristics of hypertext had been established. First, both the *Memex* and Nelson's (1981) vision of hypertext included a strong multimedia component by connecting pictures, text, and video. Second, within these initial specifications, one can see the theoretical beginnings of multilinearity.

During the next decade, scholars within the humanities noted hypertext's potential for the author to create an ideal text, as exemplified in the writings of Jacques Derrida, Roland Barthes, and Andries van Dam (Landow, 1992). For these individuals, the text

was conceived as a network instead of a traditional, linear document. According to Landow (1992), with a networked text, reading becomes an act of writing because, as one connects blocks of text in a multilinear order, a somewhat unique document can be built with each reading—an act of creation that is as dependent on the reader as it is on the author.

By the mid 1980s and early 1990s, a few hypertext-authoring environments had been created, but only on a limited scale and within small, scientific enclaves. What was needed to extend hypertext research was a readily accessible program that would allow scholars across disciplines to test their theories in a more systematic fashion.

Hypertext Authoring Environments: Intermedia to the WWW

Today, with the proliferation of the World Wide Web and the preponderance of .html editors, the creation of hypertext documents seems to be a rather simple task, yet in the early days of the technology, it would require the combined efforts of academic and commercial institutions. Working with colleagues from Brown University, George Landow helped to develop a product called *Intermedia*, which was built upon many of the specifications of the *Memex*. In addition, *Intermedia* allowed the user to view documents as visual maps and add marginal notes for individual use or to be shared between authors.

Once the viability of hypertext became feasible, other products soon followed. *Hypercard* became the first widespread, commercially available authoring environment and was shipped with every new Mac after 1987. Conceptually, *Hypercard* consisted of a series of electronic filing cards. These could contain text, pictures, sounds, and even video. All of these elements could be linked to other cards. Along with this capability,

Hypercard also included a simple scripting language, making it possible for the large user base to create interactive documents. As one of the first available hypertext products, *Hypercard* provided a foundation upon which other applications could be built.

Also in 1987, Jay David Bolter and Michael Joyce presented a new hypertext-authoring program called *Storyspace* to the First International Meeting on Hypertext at the University of North Carolina at Chapel Hill. The program was based upon the theoretical writings of Dr. Bolter and boasted several new features that had not been available before. One of the most innovative was the capability to create dynamic links, which could become active or inactive, depending upon which nodes of the text had been accessed. In this way, the author had greater control over how the user might view a given document. In addition, *Storyspace* provided a series of maps that graphically illustrated the structure of a hypertext for both the author and the user. *Storyspace* continues to be an important tool and is utilized by creative writers, educators, and academics (Kolb, 1994).

Within the past 10 years, there has been somewhat less interest in products designed specifically for the creation of hypertext, yet most multimedia authoring programs include some limited textual linking capabilities. For example, Adobe's *Flash* and *Director* are primarily used for animation; *Authorware*, for educational multimedia presentations; and *Toolbook*, for training. None of these programs exhibit the sophistication of *Storyspace*, which is solely designed for the creation of hypertext.

With the advent of the World Wide Web, hypertext became possible without the use of a specialized authoring program. Instead, a word processor and simple .html tags could be used to create multilinear documents. Many believe this to be a double-edged

sword. Rather than resulting in sophisticated linking, as one might build in *Storyspace* or even *Hypercard*, .html documents offer only static, uni-directional links with very limited authorial control. At the same time, the technology has made it possible for hypertext to become much more common place as the core technology that supports much of our media landscape.

Hypertext Works: Hyperfiction, the Jasper Project, and Yanamomo Interactive

The application of hypertext technology has a tradition of being an interdisciplinary endeavor in which artists, educators, and scientists create new works. Innovative writers attempted to operationalize the claims made by literary theorists, such as Barthe's (1975) notion of an "open" and "writerly" text in which the narrative is continually created anew by the reader. For example, Joyce's (1990) novel entitled *Afternoon* is structured very much like a "choose your own adventure" book. At key passages, the reader can select a given path, which, as the story unfolds, will alter the plot—providing the reader with a somewhat interactive experience.

Just one year later, Stuart Moulthrop (1991) wrote the novel *Victory Garden* in response to Joyce's (1990) *Afternoon*. Moulthrop (1991) believed that *Afternoon* was much too linear. While Joyce (1990) used the text itself as the interface, Moulthrop (1991) relied upon a map metaphor, which he presented as a garden maze. In *Victory Garden* the user can explore the maze in any order one wishes by clicking on hidden links that lead to various sections of plot and description. From these, the reader must piece together the overarching narrative.

Since the early works of Joyce (1990) and Moulthrop (1991), other hyperfictions have followed, such as Shelly Jackson's (1997) *The Body & A Wunderkammer,* Pipsqueak Productions (1997) electronic novel entitled *The Company Therapist*, and Megan Hepworth's (2006) *Of Day, Of Night*.

These early experiments in hyperfiction help to highlight another important feature of hypertext reading. Although several different paths can be followed within Joyce's (1990) or Moulthrop's (1991) works, these are still created by an author, one who provides a set number of combinations. Despite what some postmodern theorists suggest (Landow, 1992), hypertext does not offer *unlimited* potential for reader control.

Educational technologists also designed hypertext applications. Whereas the writers of hyperfiction built interactive novels as a response to literary theory, educational technologists saw it as a unique platform to test constructivist (Piaget, 1977) and constructionist theories (Papert, 1993). According to these theorists, effective instruction should provide the learner with an interactive environment to explore ideas and "construct" knowledge in an idiosyncratic fashion. Hypertext was considered an ideal medium to promote this type of learning. For example, in 1991, research groups at Vanderbilt University created *The Jasper Series*, an early application of branching hypertext video.

In the late 1990s, several anthropologists also created a groundbreaking ethnographic work entitled *Yanomamo Interactive*. Unlike other hypertexts that were built from scratch, *Yanomamo Interactive* was repurposed from an ethnographic film entitled *The Ax Fight* by Timothy Asch and Napoleon Chagnon (1975). The project was designed to accompany an introductory anthropology textbook as an additional learning resource to

demonstrate contemporary field techniques. *Yanomamo Interactive* contains the film in its original form, a version that hyperlinks the documentary with the filmmakers' commentary, and an interactive kinship chart that allows the user to identify the various indigenous participants and how they are related to one another.

More recently, there has been a heightened interest in hypertext among ethnographers, but relatively few actual studies (Ruby, 2005). Several, however, are worth noting. Roderick Coover (2003), a well-known filmmaker, created a commercially available project entitled *Cultures in Webs*. This unique work includes three hypertext essays. In the first, Coover (2003) outlines his approach to ethnographic hypertext, which relies mainly on concepts of montage as borrowed from the cinema. Interestingly, he enacts his argument in the very form of the document by juxtaposing theoretical writings with images and video. In his second essay, Coover (2003) attempts to demonstrate principles of multivocality by incorporating a three columned document, with each column providing a different stylistic voice. The third essay contains a much more multimedia intense presentation by showcasing video, photographs, and sounds to represent a music festival from Ghana.

Jay Ruby (2005), a strong proponent of reflexivity within ethnographic films, attempted to demonstrate these same theories within a hypertext environment. Near the end of his academic career, he took an extended sabbatical to document the ways in which his hometown of Oak Park, Illinois had changed since his youth. Ruby (2005) tried to incorporate a multivocal component by utilizing an online forum as part of his presentation, where participants could comment on all of his findings.

Internationally, especially within anthropology and sociology departments, there has been an ongoing effort to develop new forms of hypertext-based ethnographic discourse. At Cardiff University in Wales, Dicks, Soyinka, and Coffey (2006) established the Center for Qualitative and Hypermedia Research. Although the center no longer exists, it contributed to the production of several works, including an ethnographic hypertext to document the ways that children learn within a local museum.

As one surveys this new and emerging area of ethnographic hypertext, it is clear that there is ample room for further research. Although the technology has been in existence for some time, we lack practical applications that might help us better understand its strengths and limitations as applied to ethnography.

A Critical Analysis of Hypertext Characteristics

During the past several decades, ethnographic texts have faced a "crisis of representation" (Clifford & Marcus, 1986). Rather than what was once considered a reasonably objective account of cultural practices, critics now claim that all display formats reduce the complex and rich experience of the field to a linear, hierarchical representation that masks its own constructedness (Clifford & Marcus, 1986).

As a response, researchers have proposed different strategies to demonstrate the complexities of ethnographic experience. Although somewhat varied in their application, most of these techniques fall under the rubric of reflexivity in which the author attempts to create an aura of transparency to highlight the interpretive nature of the ethnographic text (Geertz, 2000). Ethnographers enact reflexivity in several ways such as exposing issues of power related to the researcher and the process (Behar, 1996; Ellis & Flaherty, 1993; Rosaldo, 1989; Rose, 1990), providing thick description through multitextuality

(Pink, Kurti, & Afonso, 2004), and experimenting with display techniques including poems, stories, and performances (Lindlof & Taylor, 2002). More recently, they have begun to utilize hypertext as a means of implementing these same techniques in new ways (Pink, 2007).

Ethnographers who embrace the technology make strong claims regarding its usefulness, suggesting that hypertext might alter the ways that we represent experiences from the field and create more reflexive texts (Pink, 2007). Three characteristics of hypertext make this possible: multilinearity (Dicks, et al., 2005), multivocality (Pink, 2007), and multimodality (Coover, 2004). Although there is great potential afforded by the technology, one must be careful not to overstate its usefulness. The following section includes a more critical analysis of these characteristics and provides a discussion of their benefits as applied to ethnographic research.

Analysis of Claims

Hypertext: A Working Definition

Within the present study, hypertext has been defined as a form of writing in which various textual passages, termed *nodes* (Landow, 1992), are linked to other nodes in associative patterns (multilinearity). These allow the reader some freedom to construct a given document in a unique order (Bolter, 1991). Additionally, though some differentiate between hypertext, which they consider to be solely comprised of text, and hypermedia, which includes all media types (video, sound, images, and animation) (Nelson, 1965), within the current study, the more broad term of hypertext will be used to encompass both text and additional media linked together in branching structures.

What Are the Perceived Benefits of a Hypertext?

Hypertext Documents Provide a Degree of Multilinearity

One of the benefits of multilinear hypertexts stems from the fact that they can contain supporting documentation through extensive digressions without disrupting the coherence of the central argument (Dicks et al., 2005). For example, a hypertext author might include a traditional, linear text as a narrative spine from which secondary essays could link. With this structure, the reader could follow the main argument in a step-by-step fashion or examine additional nodes to get a better sense of the complexities of certain aspects of a given study (Figure 1).

Ruby (2005) provides an excellent model for this type of linking structure within his ethnographic hypertext entitled *Rebekah and Sophie*. Rather than the requisite two or three pages in which the researcher typically describes issues of reflexivity, Ruby (2005) includes several full essays in which he discusses his choice of topic, family connections to his site, and even embarrassment over his growing fears of racial violence within his hometown of Philadelphia. In this way, Ruby creates a more extensive and complex document than would be available in a print-based manuscript.

The potential for this kind of linking is unlimited, and one might assume that the greater the number of links, the more complex the representation. Recent research, however, does not support this assertion. Numerous interdisciplinary studies have found that some readers find extensively linked hypertexts confusing (Dee-Lucas & Larkin, 1995; Hammond & Allinson, 1989; Jonassen & Wang, 1990; McDonald, 1998; Spiro & Jehng, 1990), and as a result, may experience frustration while navigating these multilinear documents. Further, and perhaps more applicable to ethnographic texts, some

readers frequently skip key information, which can lead to fragmented knowledge of a given topic (Shneiderman, 1992).

In the case of ethnographic texts, fragmented knowledge poses a significant problem (Figure 2). Readers engage with ethnographic works to better understand a given cultural practice, one that has been interpreted by a researcher in the field. By allowing an option to skip these key insights, the reader may bypass important interpretations and merely speculate on the intended purpose of linked nodes. Additionally, as reported by Pope (2010), extensively linked documents often leave the reader devoid of feelings of narrative pleasure through closure. Although ethnographic texts are not narratives in the literary sense, researchers have noted the similarities in the two genres (Goodall, 2000). It could be argued that we engage with a text, whether fiction, memoir, or scholarly manuscript, to watch an orderly plot unfold (Pope, 2010). If we rely on a representational format that intentionally lacks any conclusion, we may be bypassing an important aspect of the reading experience.

Dicks et al. (2005) provide a reasonable solution to these problems by suggesting that a multilinear presentation should be carefully sequenced. Unlike a hyperfiction in which nodes can be explored in a random fashion, the ethnographic hypertext must include a specific pathway through the data, carefully balancing the tradeoff between freedom and control (Dicks et al., 2005). Each link should be designed with a specific outcome in mind, one that supports the overall goal of communicating the researcher's interpretation of cultural practices.

Hypertext Documents Provide a Degree of Multivocality

Pink (2007) states that a hypertext can "simultaneously represent narratives told from different standpoints, by different voices, in different media, as well as the connections between these narratives" (Pink, 2007, p. 194). She provides two examples to illustrate how this can be accomplished. Stephen Lyon, who, as a PhD student, conducted fieldwork in Pakistan, published an online version of his field notes, photographs, and contributions from local communities. These materials were available for comment from visitors to his site. Jay Ruby (2005), following a similar approach, created an online forum where the participants from his *Oak Park Stories* could add their voices to his ongoing study. According to Pink (2007), with the inclusion of these comments, the respective authors achieved a degree of multivocality, yet we must be wary of such large claims since ethnographic experiences are always filtered through the subjective lens of the researcher (Alcoff, 1992) (see Figure 3). One chooses the topic, selects the site, and provides rhetorical evidence to support a particular position. Further, the forum itself becomes a response to questions posed by the researcher. Without an equitable means to convey ideas, ethnographic hypertexts lack true multivocality.

Despite these limitations, there is some potential for multivocal techniques. Several recent ethnographic film projects have given a forum to indigenous voices by providing the participants with cameras, editing equipment, and co-authorship of the finished films (Coover, 2004). Just as low-cost video equipment has become more readily available to researcher and participant, so too has the computer, software, and techniques to produce new media. Yet we will continue to face the problem of creating a multivocal document

because, in the end, a single author has ultimate control over the content and structure of the finished work.

Pink (2007) also suggests that with hypertext, the researcher might include robust explanations by the participants and utilize the links as the interpretation, resulting in a more pristine representation of the field. In this way, consensus, disagreement, and greater complexity of a given cultural practice might be demonstrated. This idea, too, is problematic. Even if it were possible to include a given participant's voice without filtering it through the researcher's subjective interpretation, the links themselves introduce a new layer of subjectivity (Figure 4).

Hypertext Documents Provide More Complex Representation of the Field Through Multimodality

Proponents of ethnographic hypertexts frequently imply that multimodal documents offer a representation that is closer to reality (Coover, 2004; Dicks et al. 2005; Pink, 2004, 2007; Ruby, 2005). It is tempting to make such a claim because video, audio and photographs, unlike text, bear a striking resemblance to the material world. Yet just as was the case with print-based technologies, every representation becomes an interpretation (Clifford & Marcus, 1986). In the same way that one selects individual quotations and descriptions within a written document, so too does the multimodal ethnographer decide upon the "framing" of an individual shot, audio segment, or photograph.

It is more reasonable to suggest that multimodal documents provide the author with additional rhetorical choices. One can, for example, convey theoretical arguments through textual representations in which linearity is necessary. At the same time, when

describing kinesthetic information, full motion video may be more appropriate. For the hypertext-based ethnographer, this does not have to be an either/or decision. One can select from an arsenal of media choices.

Summary: What is Possible in Practice

This chapter began with a brief history of hypertext technology. From it, three unique characteristics of hypertext were established (multilinearity, a degree of multivocality, and multimodality). Researchers who practice ethnographic methods have noted the potential for more complex representations by utilizing these technologies (Pink, 2007), yet as has been described, there are certain limitations that go along with these benefits.

Multilinear ethnographic hypertexts provide a means by which we can create branching narratives whereby the author can add materials to augment a traditional, ethnographic write-up; however, if the branching structure is too complex, the user can become lost in hyperspace (Dee-Lucas & Larkin, 1995; Hammond & Allinson, 1989; Jonassen & Wang, 1990; McDonald, 1998; Spiro & Jehng, 1990). As noted by Dicks et al. (2005), any linked digressions should maintain a degree of cohesiveness through specific sequencing. Additionally, it is important that links are placed to communicate the author's intended purpose, rather than linked because there is a cursory connection between two related ideas.

It was also noted that true multivocality is perhaps more of an idealistic dream than a reality within ethnographic hypertexts. Even though the researcher can build a given study from a variety of collected voices, these are continually sifted through the ethnographer's interpretive framework. Although there is potential for more extensive collaborations in the future, most of the current examples lack true multivocality. At the

same time, however, there are possibilities by which the researcher might include more reflexive moments by including one's own diverse, and sometimes-conflicting perspectives (Biella, Chagnon, & Seaman, 1999).

One of the most promising applications of multilinear hypertext technology stems from its inherent multimedia capabilities. Although one can never represent the "lived experience" in the field, multimedia elements afford different rhetorical possibilities. For example, if describing a dance or ritual in which kinesthetic information plays a significant role, then video might be the right choice. If the goal is to describe the nuance of a conversation, perhaps audio is a more appropriate medium. In short, the researcher uses a variety of modalities to collect data, so it makes sense to use different media to present it.

From this literature review, it becomes clear that there exists much more theoretical writing about ethnographic hypertext than actual works. To fill this void, this study provides a working prototype to demonstrate the described principles in action. In the chapter to follow, I describe the method by which the various materials were collected and analyzed in the creation of this work.

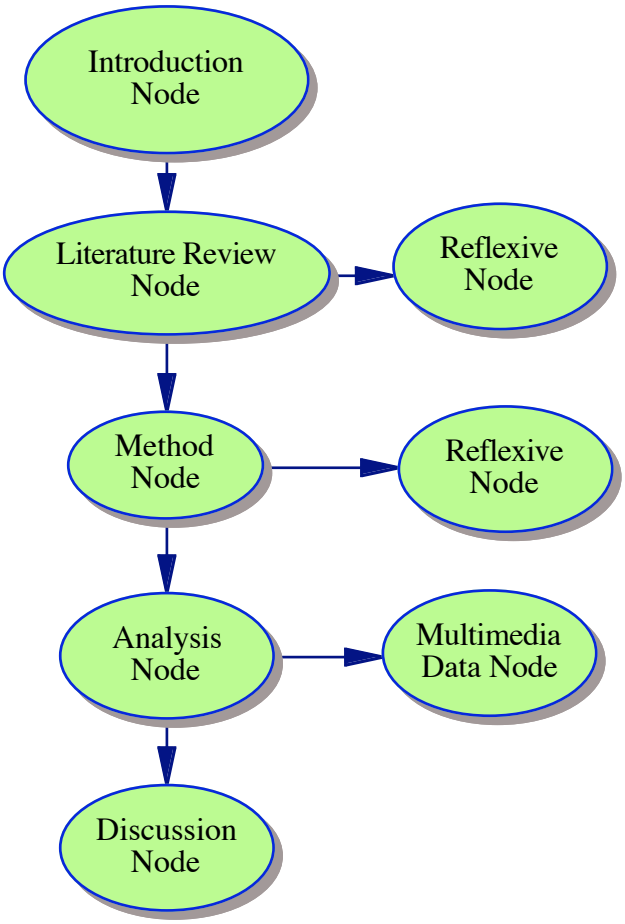

Figure 1: Multilinear Hypertext with Limited Branching

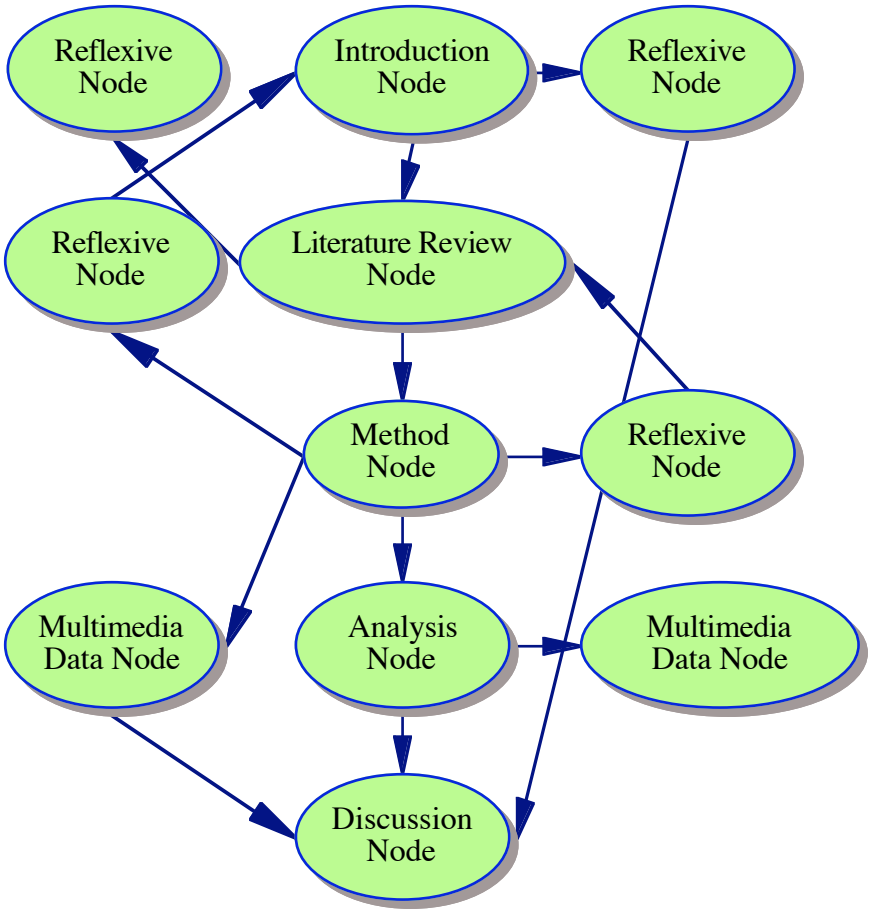

Figure 2: Multilinear Hypertext with Extensive Branching

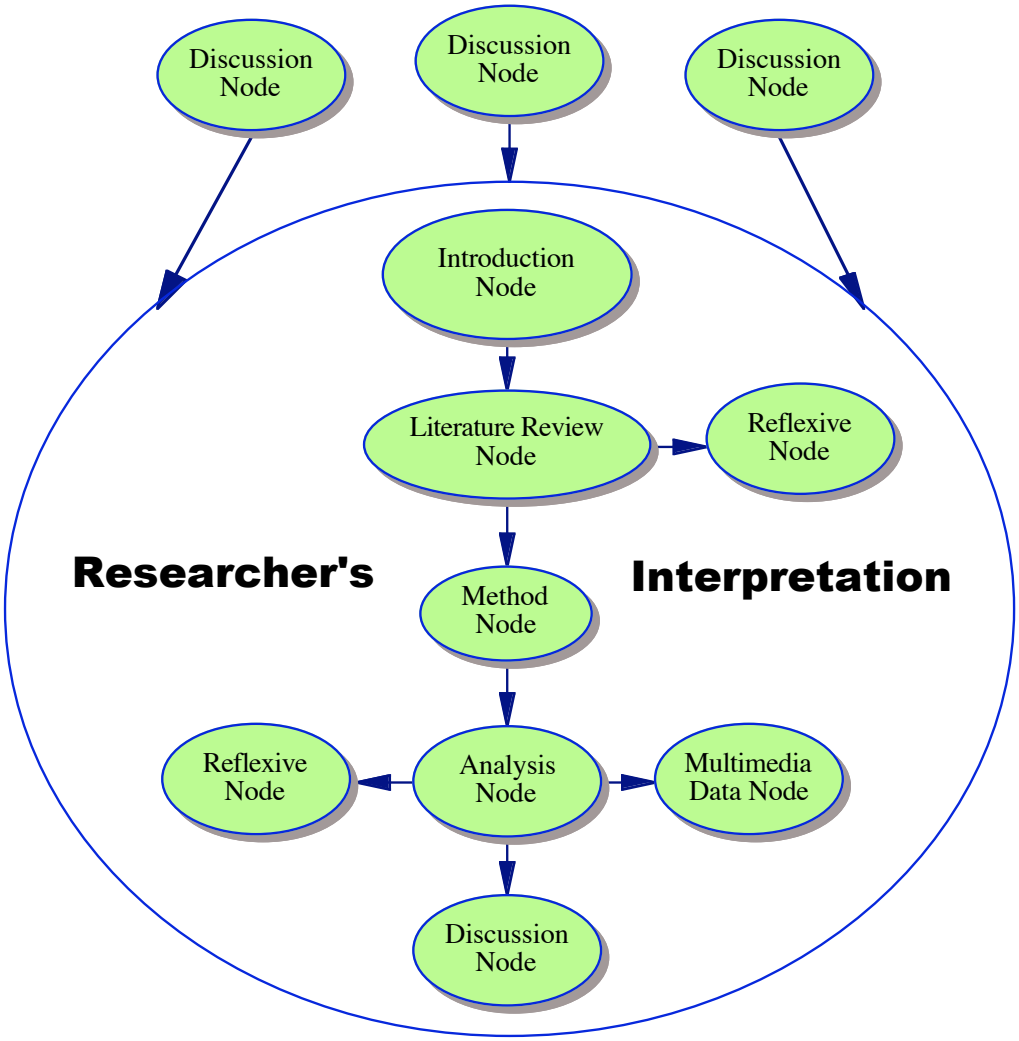

Figure 3: Researcher's Interpretation of Ethnographic Experience

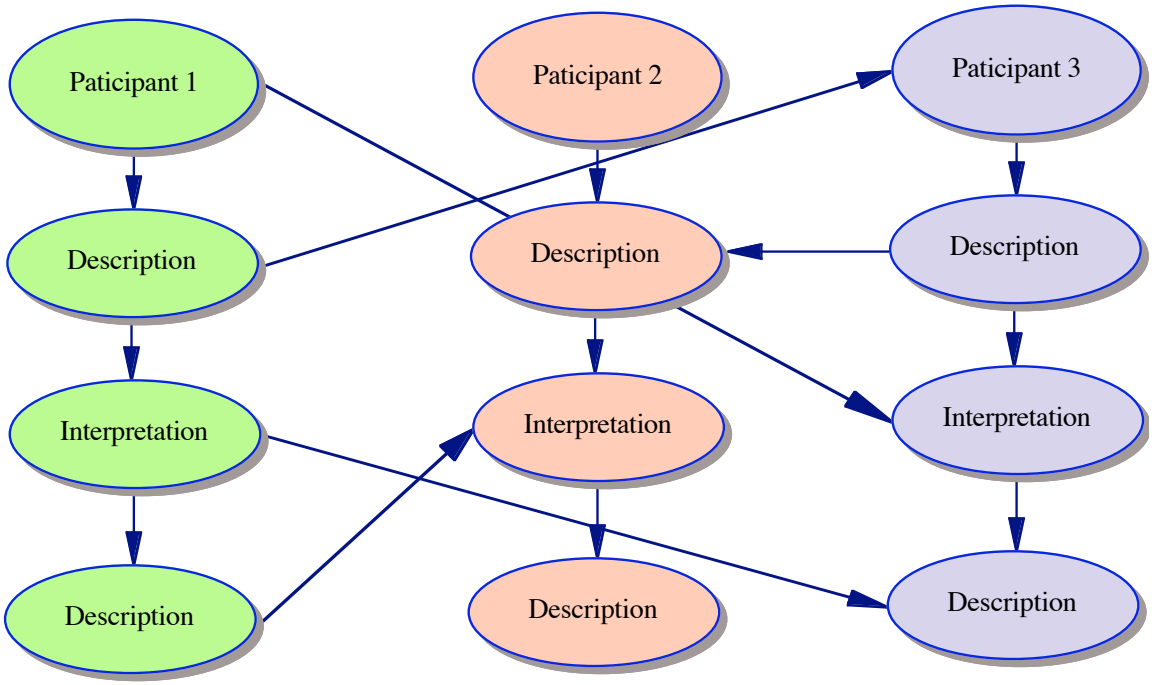

Figure 4: Connections Between Participants

CHAPTER 2

METHOD

This chapter outlines the methodology used to collect and analyze the data for the accompanying prototype[1]. As with a traditional ethnography, it includes a description of the chosen site (The Royal Museum for Central Africa), video and photographic techniques, participants, and analysis. I also include key information for the ethnographer who wishes to present data in an electronic display format.

The methodology was distilled from recent scholarship that examined museums as related to the production of public memory (Atwater & Herndon, 2003; Dickinson, Ott, & Aoki, 2006; Hasian, 2004; Katriel, 1993; Katriel, 1994; King, 2006; Newbury, 2005; Scott, 2005; Scott, 2007). In each case, the authors approach visual displays as a kind of text that can be unpacked with a nuanced reading of the sometimes overt, but more often, subtle messages contained in the studied exhibits (Scott, 2005).

These museums become rich sites for analysis because they can be viewed as the physical manifestation of public memory (Atwater & Herndon, 2003; Dickerson, Ott, & Aoki, 2006; Hasian, 2004; Katriel, 1994). In contrast to traditional views of history, public memory is a shared conception of historical events that are often "reshaped" and

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[1] The prototype that was built for this project is currently housed at http://www.woodcollab.com/congo. The author will make every possible effort to maintain this site; however, because of the evolutionary nature of the World Wide Web, the site may occasionally change locations. If this occurs, please contact the author at rwood@westminstercollege.edu.

"packaged" within a museum space to capture a sense of authenticity (King, 2006, p. 235). Interestingly, museums, as conveyors of public memory, serve a greater function, such as solidifying a national identity or alleviating guilt over historical injustices (Dickinson, Ott, & Aoki, 2006; Prosise, 1998).

Most scholars who study public memory take a decidedly critical stance because the chosen sites tend to be politically charged. For example, several researchers have examined memorials that depict the violence of various holocausts (Hasian, 2004; Prosise, 1998; Prosise, 2003; Schiffrin, 2001). Others have tackled the thorny issues of race (Atwater & Herndon, 2003; Dickinson, Ott, & Aoki, 2006; King, 2006; Newbury, 2005). In each case, the authors' overall purpose has been to explicate the ways in which museum displays reinforce hegemonic values.

The current study is similarly located. In it, I examine the Royal Museum of Central Africa (RMCA), which, during the past decade, has been the center of an intense controversy (Figure 5). The RMCA remains one of the last colonial museums, and within its walls, the visitor is presented with a 19th century view of colonization.

Leopold II originally built it in 1898 to showcase his soon to be acquired African colony and demonstrate the incredible financial opportunities that would be available to European investors. Along with displays of flora and fauna, the RMCA contains narratives that highlight the civilizing mission of Leopold's efforts. For example, upon entering the museum, visitors are confronted with large, golden statues with titles such as "Belgium Brings Civilization to the Congo" (Figure 6) and "Belgium Brings Security to the Congo" (Figure 7).

As one might imagine, the 19th century attitudes conveyed by these statues do not bode well in a time of political correctness, and as a result, the museum has come under intense scrutiny. For example, Adam Hochschild (1998), in the most recent addition of his bestselling book, *Leopold's Ghost: A Story of Greed, Terror, and Heroism in Colonial Africa*, includes an entire chapter that describes the ways in which the RMCA remains a tribute to Leopold II, whom he suggests was responsible for an African genocide in which 10 million Congolese lost their lives (Hochschild, 1998).

As a response to these accusations, Dr. Guido Gryseels, the current director of the museum, initiated a renovation of the facilities. After numerous internal debates, public forums, and institutional workshops, the RMCA opened its doors in 2005 to a new temporary exhibit entitled "Memory of the Congo."

"Memory of the Congo" included many exhibits that ran counter to an accepted view of Belgian history and instead made mention of the injustices that were propagated as part of Leopold's reign. For example, as shown below (Figure 8), one prominent display highlighted the work of E.D. Morel and Roger Casement in which they worked together to eliminate some of the more rapacious practices such as forced labor and the intentional mutilation of Congolese citizens.

The temporary exhibit has since become a permanent fixture within the RMCA. Today, displays throughout the museum appear at odds with one another. Some, such as the statues *Civilization* and *Security* (Figure 6 and Figure 7) continue to promote a nostalgic view of colonization, whereas more contemporary displays highlight violent aspects of the "civilizing" mission. Within these ambivalent displays, the museum offers

an opportunity to examine the competing narratives that reflect different versions of colonial history.

The current study seeks to connect the RMCA to public memory surrounding the Belgian Congo. To this end, I interviewed colonial veterans who lived through the later period of colonization to determine how their shared memories would compare to the narratives contained within the RMCA. The study utilized a hybrid research method, one that included an analysis of the museum and semistructured interviews with participants.

In reviewing the related literature, other scholars have used interview techniques as part of their analysis of monuments and museums (Fried, 2006; Katriel, 1993; Laleh, 2005), yet most of these studies interrogate the curators and docents rather than the individuals who are the subject of the museums. The current study offers a unique approach that has rarely been explored in previous works. In the sections that follow, I carefully explain the methodology used to catalog, code, and analyze the contents of the RMCA, along with the interviews conducted with colonial veterans.

The Site: A Physical Description

The RMCA is located in a small suburb of Brussels called Tervuren. The building is modeled after a royal palace and contains large, spacious rooms (Figure 9). Each of these house exhibits that highlight different aspects of the Congo. They are 1) the Rotunda, 2) Central African Ethnography, 3) Art Room, 4) H.M. Stanley, 5) Memorial Gallery, 6) Congo: the Colonial Era, 7) Agriculture and Forest Economy, 8) Zoological Dioramas, 9) Birds, 10) Fish, Amphibians, and Reptiles, 11) Insects and Invertebrates, and 12) Comparative Ethnography.

The museum also includes educational facilities in which school children engage in activities to promote active learning. For example, within the upper rooms, the staff has constructed a replica of a contemporary Congolese village. Other educational rooms provide students with traditional African musical instruments (Figure 10), games, and a display of insect specimens that have been collected from the region. Beyond the interior, the RMCA is situated on a large green space with ponds, flowerbeds, and a river. Scattered throughout the landscaping appear numerous statues that depict aspects of life in the Congo as well as several that have been erected as tribute to Leopold II (Figure 11). Most visitors stroll through the grounds as part of their tour, and so these became an important source of data for the current project.

Photographic and Video Collection Techniques

Following the method as outlined by Scott (2007), during my first visit, I experienced the RMCA as a typical tourist: walking through the halls, talking to the curators, collecting brochures, and even eating in the on-site cafeteria. The overall goal of this trip was to get a general sense of the space and sample the milieu in the spirit of participant observation (Scott, 2007).

I made four subsequent visits. On these trips, I began the process of photographing the space and the exhibits by utilizing techniques as described by Newbury (2005). Each exhibit was initially framed to include all of the objects within a given display. This provided a good sense of the physical arrangement of artifacts, which often play a significant role within the overall narrative. Additional photographs were then taken to capture the individual elements in greater detail.

Beyond the displays, each accompanying textual description was also photographed. As demonstrated by Schiffrin (2001), textual elements are often overlooked in museum studies, which tend to be more visually oriented. Yet these signs provide important clues to the ideological agendas embedded within museums.

In addition, following the approach of Katriel (1993), I conducted interviews with key members of the museum staff including Dr. Guido Gryseels, the director of the museum; Boris Wastiau, an anthropologist; Sabine Cornelis, an art historian; Min De Meersman, the director of education; and Hein Vanhee, a collections manager. As noted by King (2006), museum personnel are in a unique position to shape exhibits in ways that reflect current ideology and public memory.

Each interview took place within the office of the participant utilizing a Panasonic VX 100B camera, lavaliere microphones, and several portable film lights. The questions followed an open-ended, narrative approach in which I asked each participant to describe their impressions of the old museum and the process by which they hoped to proceed with future renovations. Throughout this discussion, I prompted participants to include any examples that might help me better understand the various internal and external influences within this ongoing renovation project.

The Veterans

To uncover first-hand narrative accounts, I needed to locate veterans from the second period of colonial history that occurred shortly after Leopold II transferred control of the colony to Belgium (1908-1960). Serendipitously, during the fall of 2005, several newspaper articles appeared within the international press in which many veterans came forward to defend Leopold II and their work in the Congo. These stories referenced a

colonial organization called the Royal Belgian Overseas Union (UROME), one of the largest colonial groups within Belgium. UROME allows former colonists to maintain contact with others who served in the Congo. With nearly 10,000 members, it proved to be a valuable resource for the present study.

I initially contacted Andre Schorocoff, an officer in the group. After several email exchanges and international telephone calls, Andre agreed to assist me with the project. Following a snowball sampling technique (Levy & Levy, 2001), I was able to set up 23 interviews with participants before ever setting foot in the country.

Most of the participants were between 75 and 90 years old. The sampled group included 5 women and 18 men. They came from a wide variety of occupations such as civil servants, administrators, judges, medical personnel, educators, soldiers, and agronomists. Together they comprised what Hufford (1996) calls a "generational cohort," meaning that they participated in a particular period of history and were relatively close in age.

All male members of the sampled population had a college education because the Belgian government required the colonists to attend the Colonial University, an institution that was established to provide some training before entering the field. The female participants had traveled to the Congo with their spouses, but were not officially employed by the government. As a result, they were not required to attend the university. Five participants possessed medical degrees. Four had obtained PhDs, including one of the women, who had been in the colony as a child and since returned as a professor. And two participants had been awarded law degrees. In short, the members of UROME are

generally quite educated and are considered middle to upper class members of Belgian society.

It should be noted that the members of UROME had a vested interest in the project. The participants were troubled by the negative accounts that surfaced following Hochschild's book and saw my project as an opportunity to counter them in a public forum. This resulted in a particular point of view, but, as noted by King (2009), often what might be considered a challenge can prove to be a strong asset. In the case of the current study, it prompted very active conversation that led to rich data.

The Interviews

The interviews took place in a small office within the Belgian State Department. The room is circular, with windows running around the perimeter. A table and chair were positioned at one end (Figure 12), and the camera at the other. Additionally, two lights were placed on either side of the camera to improve the quality of the video image.

All of the video footage was shot with a Panasonic VX100B. The camera was selected due to its impressive video quality and relatively compact size. Because many of my participants had not spent a significant amount of time in front of the camera, I hoped to make the setup as unassuming as possible. For audio, I utilized two lavaliere microphones, along with a single boom, to capture ambient sound and any follow-up questions.

The interviews followed a semistructured interview approach (King, 2009). Each began with a brief statement of the participant's name and occupation, followed by a discussion of first impressions of the Congo. To prompt further discussion, I selected questions from the following list:

1. What was your motivation to go to the Congo? Why did you decide to go?
2. Compare your time in the Congo to other periods in your life.
3. What were your impressions of the Congo upon your arrival? Did your impressions change over time?
4. Describe the ways in which you helped the native populations.
5. What was the most fulfilling aspect of your job?
6. What were some of your professional duties?
7. What kinds of social activities played a significant role in your life?
8. Describe your relationship with the Congolese and other veterans?
9. What were the best parts of your job? What aspects were not so nice?
10. What was daily family life like?
11. What were the schools like (for Europeans and Congolese)?
12. What were the medical facilities like? Were they adequate?
13. What are your most interesting memories?
14. How are colonials perceived today? Has this changed over time?
15. How would you respond to recent television programs that have been critical of the Belgian Congo?
16. What do you think about the Congo today?
17. Tell me about the events that led up to Independence.
18. Did you attend the "Memory of the Congo" exhibit? What were your impressions?
19. Would you like to discuss anything else that we have not covered?

These questions were a starting point for the interviews. If a topic seemed especially interesting, I would follow up with further spontaneous questions that might lead to new

insights. Toward the end of the interviews, I would ask questions that could be considered more sensitive, such as if/how their feelings about colonization had changed over time. These final questions were saved for the conclusion of the interview because it was not clear what kinds of reactions they would elicit, especially in light of recent accusations by the Belgian press.

Each interview lasted approximately 1 hour; however, several extended into an additional hour because the participants felt as though they had not been given adequate time to discuss their memories. Many of the participants also brought materials to the interviews, such as photographs and legal documents. These were quite helpful and tended to stimulate conversations between the colonial veterans and moved the interviews into unexpected topics and informal discussions.

The participants were told that they could stop at any time in the process and collect their thoughts or take short breaks. This became necessary in multiple cases. Due to their age, participants often appreciated time to relax and relive their memories. These breaks proved to be helpful for the project because I had the opportunity to discuss their experiences in a less formal setting, which tended to put them at ease and stimulate conversation that may not have occurred within the formal confines of the interviews (Figure 13).

Analysis and Coding

Upon returning to the states, I began the process of digitizing, transcribing, and coding the collected materials. There are a variety of software packages from which the ethnographer might choose to code data, such as Nvivo 8, one of the most popular qualitative analysis programs. I selected Nvivo 8 because it offers a robust tool set for

ethnographic hypertext, including a means to transcribe interviews and code numerous media such as text, images and video (Figure 14). Additionally, it allows the user to create internal memos, which can then be hyperlinked to the actual data.

Coding the Interviews

As noted by Ragin and Becker (1992), one of the most fundamental research questions within any study is how one constitutes a "case." Within my study, I conceptualized each interview as an individual case. Yet an interview represents a large category from which more subtle patterns can be observed. As a result, each interview was then divided into narrative segments that have been termed episodes (Anderson, 1986; Charmaz 2006). Typically, these episodes followed a narrative format. For example, many of my participants described the month-long boat ride to the Congo from Belgium. These short anecdotes tended to follow recognizable narrative conventions in which there was a beginning to the story, middle, and an end, which helped to delineate the unit of analysis (Marvasti, 2004).

Each of these episodes was coded in a descriptive fashion related to the content embedded within the stories. Examples of early codes were "daily life," "professional duties," and "social gatherings." Like the early example of cases, these proved helpful as means of sorting data into related groupings, but they were not terribly helpful in uncovering attitudes.

As a result, I began a third pass through the data. During this stage, each episode was further divided into paragraph units as outlined by Anderson (2010). In analyzing these, I noted how the participants utilized various rhetorical strategies to defend the colonial enterprise. For example, within the episodes that had been coded as "professional

duties," they would describe the material benefits of colonization as offsetting any potential problems. Within my coding scheme, these comments were coded as "rhetorical strategy: good outweighs bad."

Beyond the verbal portions of the interviews, much information was also gleaned from the accompanying visuals. For example, most of my participants expressed disgust when describing recent attacks by the Belgian press in which the colonial enterprise under Leopold II had been questioned and criticized. To punctuate their comments, participants would lean forward with obvious disdain, furrowing brows, or waving hands in a dismissive fashion. Within my coding scheme, these units were identified with a second code such as "intense emotion: disgust." This is not to suggest that only negative emotions were coded. Many of my participants recounted their time in the Congo as the happiest times of their lives. These descriptions were often followed by tears of joy, which then became coded as "intense emotion: happiness." In this fashion, the visuals, along with the audio portions of the interviews, provided key insights into the colonial experience.

Toward the end of the coding process, I placed my codes into meaningful groupings, a technique that methodologists have termed "axial coding" (Straus & Corbin 1990; Strauss, 1987). It is important to note that this methodological approach is not without its controversy. As noted by Kendall (1999), there is a definite chasm between those methodologists who believe that codes should *emerge* from the data (Glaser, 1978), and those who believe that it is reasonable to create a theoretical framework to identify relationships that may not have been observable from the emergent codes alone (Strauss & Corbin, 1990).

In the case of the current study, I had developed a theoretical framework by noting the various rhetorical defenses of colonialism. As I began to review my data, it became clear that various codes could be grouped, based on similar characteristics. For example, I clustered "administration by the book," "discount detractors," "natives appreciated work," "only a few bad apples," "superior treatment of natives," and "good outweighs bad" together as defenses that employed similar rhetorical strategies (Figure 15). As a final step in the axial coding, I took these groupings and began to check them for frequency. For example, one of my most prevalent codes was "good outweighs bad," and so in the final write-up, this category played an important role.

Throughout the entire coding process, I engaged in memo writing (Figure 16). This is a critical activity that Charmaz (2006) calls the "pivotal intermediate step between data collection and writing drafts" (p. 72). Occasionally, I would take pause and ruminate over the meaning of the codes. I would pose questions such as "Did the patterns hold up? Was I missing anything? What have I learned so far? What do I think is going on within the data?" These memos were an important reflection on the research process, and at the same time, as described in later chapters, they proved to be a valuable resource in the resulting hypertext.

One of the most interesting aspects of memo writing within a program like Nvivo 8, stems from the fact that one can include hyperlinks to actual data. As shown in Figure 16, the researcher can assign key phrases as hyperlinks, which, when clicked allow one to view referenced media. In this way, the resulting analysis document mimics the ways that the eventual hypertext can be constructed.

Coding the Museum Displays

As with the interviews, the first step in coding the museum displays was to determine what constituted a given case. For the purposes of the study, I considered a case to encompass a single photograph, statue, or artifact and its accompanying text (Figure 17). The text and visuals worked together to reflect different aspects of the colonial period. For example, in the figure below (Figure 17), it seems that the overriding message revolves around the superior quality of medical care offered by the colonial veterans. This is revealed in both the relaxed position of the patient, along with the clean, modern hospital room. The message is further enforced with the accompanying text, which describes the ways in which medical care was improved through the implementation of the *Ten Year Plan*.

To code these displays, I began with the text. I coded it in a similar fashion as had been used with the interviews by assessing how each paragraph revealed attitudes concerning colonization. Unlike the previous work with the veterans; however, I had developed a "coding paradigm," which allowed me to focus on those elements that had begun to emerge as the most salient aspects of the study (Strauss & Corbin, 1990). In this sense, my method differed from grounded approaches as developed by Glaser (1978) and instead followed those as outlined by Strauss and Corbin (1990) in which the researcher is encouraged to place the data within categories that have already been established through axial coding.

Once the textual portions of a case had been coded, I then turned to the visuals. By utilizing coding features within Nvivo 8, I was able to isolate individual elements within specific displays. For example, within the image above, I coded the man in the hospital

bed as “superior treatment of natives” and “material benefits afforded by colonization.” In this way, text and image became part of the subsequent data set.

Not surprisingly, the newer displays often created different interpretations for events from those provided in the interviews. For example, the following photograph (Figure 18) appeared in the renovated exhibit. It depicts a young man who steals the ceremonial sword from the king during a political rally. The veterans made mention of this image, but they described it as a prank. In the museum, the same act was shown as an iconic event, representing the indigenous peoples’ efforts to achieve independence. Within my coding scheme for the museum, this photograph was coded as “rhetorical pattern: Congolese dissatisfied with colonialism,” a code that had not appeared at all in the interviews. Other images fell within this new code, resulting in the need for new groupings.

In the final analysis, the coded materials fell into a variety of coded categories, each representing a different rhetorical strategy as employed by the veterans and museum. Many of these from the veterans tended to be pro-colonial; however, this was not always the case. In the same way, the museum displays often presented conflicting narratives. Yet by engaging in the systematic analysis as described above, I was able to compare and contrast the ways in which the museum displays adhere to and differ from the public memory as reflected by the interviews.

By way of summary, all of the collected materials (interviews and museum displays) were divided into cases, episodes, and paragraph units, along with their accompanying visuals. Each of these was coded, based upon grounded methodologies as described by Strauss and Corbin (1990). From this approach, several different rhetorical strategies

emerged as used by the RMCA and the colonial veterans. These were then grouped according to related types. Additionally, each was examined for frequency to determine the most often used techniques.

With coding complete, the project entered a new phase. I hoped to uncover design features that would allow me to effectively present the various collected narratives. In the chapter that follows, I introduce the practice of ethnographic hypertexts, analyze a selection of other ethnographic hypertexts, and demonstrate how the *Congo Prototype* builds upon these previous works.

Figure 5: Royal Museum for Central Africa

Figure 6: Belgium Brings Civilization to the Congo

Figure 7: Belgium Bringing Security to the Congo

Figure 8: Display that Depicts the Violence in the Congo

Figure 9: Rotunda

Figure 10: Educational Facilities

Figure 11: Statuary

Figure 12: Interview Setup

Figure 13: Informal Discussions

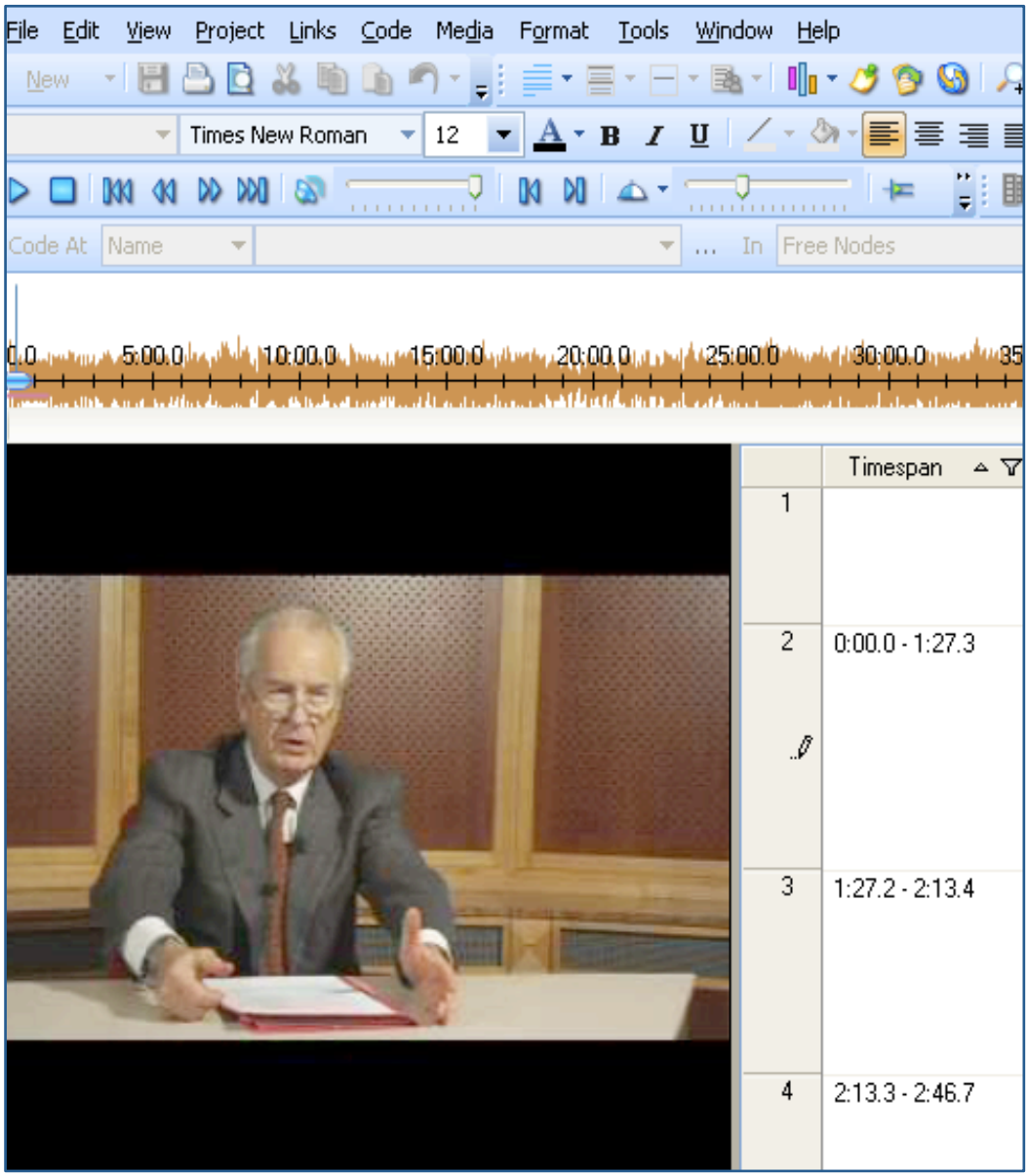


Figure 14: Nvivo 8 Video Transcription Window

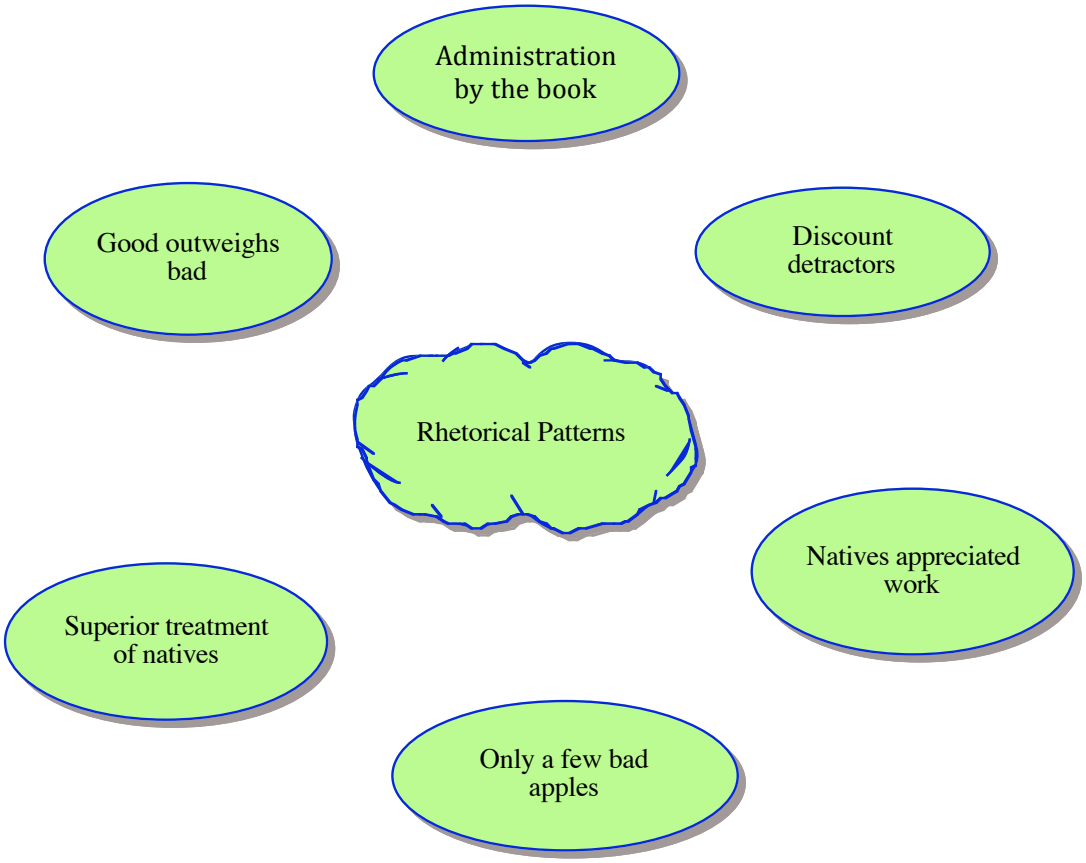


Figure 15: Axial Coding

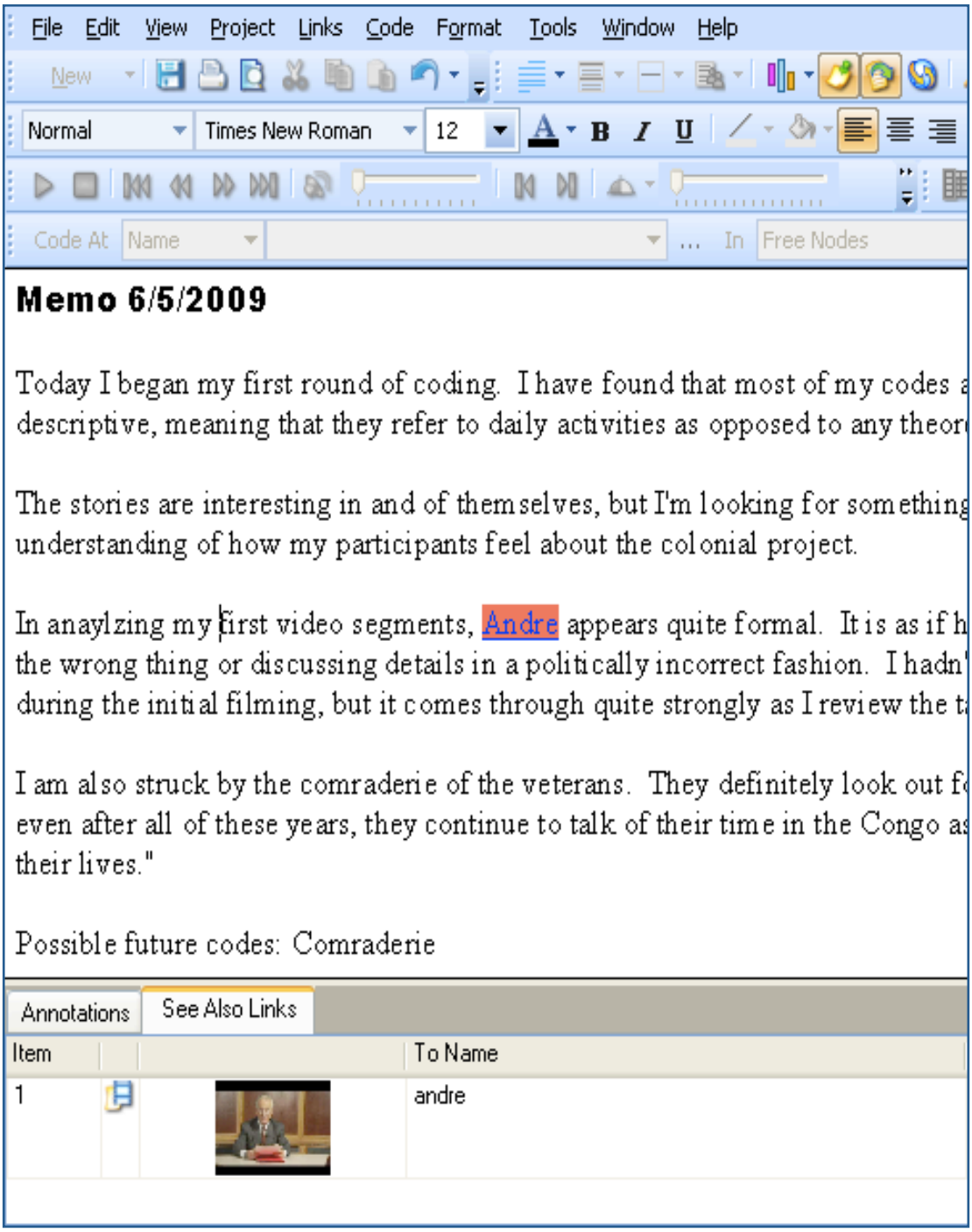


Figure 16: Nvivo 8

The Hospital at Kintambo (Leopoldville)
The Decennial Plan envisages a vast medical programme: improving hygiene conditions, creating new hospitals, laboratories and clinics and mondernizing existing ones, combating endemic illnesses, making medical care more effective, intensifying training for Congolese medical auxiliaries and male nurses.

Figure 17: Museum Display

Figure 18: Photograph from New Exhibit

CHAPTER 3

AN ANALYSIS OF DESIGN FEATURES

When developing an interactive work, whether instructional product, website, or informational kiosk, it is helpful to review published designs to determine how others have addressed issues of functionality (Savage & Vogel, 2009). Following this approach, one can avoid previous mistakes and build upon the work of other researchers. Although there exist relatively few ethnographic hypertexts to study (Ruby, 2005), three are frequently cited within the related scholarly literature: Peter Biella, Napoleon Chagnon, and Gary Seaman's (1999) *Yanomamo Interactive: The Ax Fight*; Roderick Coover's (2003) *Cultures in Webs*; and Jay Ruby's (2005) *Rebekah and Sophie*. These works have been mentioned in earlier chapters by way of example, but in this section, each is analyzed to determine which design features might best be used in future ethnographic hypertexts.

The three cited authors approach ethnographic hypertext in a slightly different manner. Biella et al. (1999) present their findings from a study of the Yanomamo tribe of South America. Their primary purpose was to create an educational resource that could augment a traditional textbook and demonstrate the complex process of interpreting field data. Coover (2003), a well-known documentarian, includes several different subjects as part of his project: a theoretical essay on hypertext as display format, a photographic essay from a wine harvest in rural France, and an ethnographic study of a music festival

in Ghana. His first essay lays the theoretical foundation for his approach to ethnographic hypertext, and the other two essays demonstrate his theories in practice. Ruby (2005), who spent most of his career as a professor of anthropology, provides a case study in which he documents changes within his hometown, Oak Park, Illinois. As part of his project, Ruby (2005) attempts to showcase hypertext's potential to incorporate greater reflexivity as part of ethnographic discourse. Because of the wide variety of subject areas and purposes, the three studies provide excellent examples by which design features can be assessed.

To provide a framework for the analysis, I utilize the characteristics of hypertext as uncovered in Chapter 1: multilinearity, multivocality, and multimodality. In the paragraphs that follow, each of the works is examined to identify how the authors incorporate these characteristics through specific design features. Rather than simply cataloging these features, I conclude subsections by stating a specific design implication. These statements played a significant role in the design of *The Congo Prototype*. As such, each implication is followed by a discussion of how it has been applied to the design of the included prototype.

Multilinearity and Design Features

Multilinearity refers to that unique characteristic of hypertext in which textual passages, termed nodes, are connected in associative patterns (Landow, 1992). It is important to note that multilinearity is not a binary attribute. Instead, it is exhibited in varying degrees. For example, works of hyperfiction contain a high degree of multilinearity, whereas academic arguments often necessitate a more linear presentation in which claims are followed by specific support. By studying the degree to which the

various authors perform multilinearity, one can better understand the ways it can be utilized within a given rhetorical context.

The most obvious method of incorporating multilinearity within an electronic document is to add uni-directional hyperlinks that lead to additional resources: text, images, sound, video, and animation. Biella et al. (1999) employ this technique in *Yanomamo Interactive: The Ax Fight*. The authors have written several different essays: an introduction to the project, two different descriptions of the ax fight, and the voice over narration from the original film upon which the project is based. Within these text-based displays appear footnotes, which, when clicked, link to scenes from the original film as a form of mediated support (Figure 19).

Hypertexts of this sort do not allow the user freedom to explore the document in a unique order. Instead, one reads through the essay from start to finish, pausing occasionally to view associated digitized clips. One might assume that this linking structure represents an inferior design, due to its simplicity, yet this is not necessarily the case. The simple structure works well when one wishes to maintain coherence within an argument (Pope, 2010).

Coover (2003) takes a much more playful approach to interface design. Each of his screens include textual passages, photographs, and video clips, placed in an artistic fashion that is more akin to a glossy coffee table book than an academic manuscript (Figure 20). These elements serve more than aesthetics, however, and can be clicked to cue additional media sources. For example, as shown in Figure 20, by selecting the photographs that run horizontally across the middle of the page, video is activated. On other pages, the same sorts of images link to sounds, photographs, and maps.

The text itself also possesses a degree of interactivity. At the end of each paragraph appear two small yellow arrows, as shown in Figure 20. Typically, the forward facing arrow causes additional textual passages to appear, whereas the backward facing arrow returns the user to a previous page. There are exceptions to this general rule. At times, the arrows display additional photographs and video clips instead of textual information. In this sense, the interface exhibits what web designers have termed an "Easter Egg" method to design, meaning that the user must search through the page with limited visual clues to indicate where links might lead (Krug, 2006).

Although this approach appears more interactive than that employed by Biela et al. (1999), it retains a strong degree of linearity. As the user reads through the document, there exists but one path through the study. One can either move forward, paragraph by paragraph, or return to previous passages.

Ruby (2005) demonstrates another approach. Like Biella et al. (1999), his interface includes several pull down menus from which secondary essays are linked (Figure 21). These menus include information on Ruby's (2005) method, historical data, surveys, and what he terms "reflexive interludes." Additionally numerous academic papers are provided such as "Maintaining Gay Identity," "The Economics of the Gay World," "Gay Marriage," and "Gays in the Mass Media."

The interface is reminiscent of the work of Beila et al. (1999), but beyond the layout of the page, Ruby's (2005) hypertext represents a departure from the *Yanomamo Interactive: The Ax Fight's* linking structure. Ruby (2005) uses each essay as a starting point from which the user might branch to any number of additional readings. For example, within the space of a few paragraphs, he provides links to a secondary essay on

architecture, a reflexive discussion of the internal struggles he faced while creating the project, and an external website where users are encouraged to comment on his findings. In this sense, Ruby's (2005) work promotes a multilinear reading in which the user might take extensive digressions from the central narrative.

Ruby's (2005) study capitalizes on the multilinearity offered by hypertext, yet as with the Biella et al. (1999) design, this comes at a cost. As a reader, one can easily become lost in the linked essays (Pope, 2010). Additionally, due to the variety of sources, at times, it feels as though the entire work has been haphazardly pieced together. Some scholars might argue that this approach represents the epitome of hypertext works (Landow, 1992). Yet, the fractured narrative will most likely not bode well with an academic audience that has come to expect a more structured presentation.

In analyzing these three examples, it is difficult to ascertain a single, best practice when it comes to multilinearity. Instead, the various authors utilize different approaches, depending upon the rhetorical purpose of a given essay. For example, Biela et al. (1999) provide extensive analysis of a film. This constitutes a kind of academic argument, which dictates a more formal, linear structure. In the same fashion, Coover (2003) describes and enacts what he believes to be an effective theory of the medium, which also represents a claim-based work. By way of contrast, Ruby (2005) attempts to show the interrelatedness of his various previously published essays in a mode that encourages exploration of the various texts, and so a more multilinear design becomes more appropriate. What can be determined is that each approach has its place. Further, it is reasonable to utilize different degrees of multilinearity within each section of a given study.

Implication

- Include multilinearity as appropriate: linear linking for academic arguments (Biella et al., 1999; Coover, 2003) and multilinear for exploratory texts (Ruby, 2005)

Application of Multilinearity within the Congo Prototype

To enact multilinearity within *The Congo Prototype*, I reflected upon my own experiences as a tourist at various historical sites and museums. During a recent trip to Bath, England, I stumbled upon a very unusual technique. The modern city is built upon the ruins of an ancient Roman bath, which one can explore as part of a self-guided tour. Instead of a physical guide, visitors are given a small headset with a digital keypad and screen. As one wanders through a series of interconnecting caverns, numbers appear on the walls. One can enter these numbers into the keypad, and a prerecorded voice describes the historical significance of each artifact.

Because each recording is self-contained, it is not necessary to follow the explanations in a predefined sequence. In this sense, the tour at Bath can be considered multilinear. Surprisingly, even without a physical tour guide, the exhibit maintains a strong authorial presence. As I ruminated on this trip, I realized that it might be possible to create a similar experience within *The Congo Prototype*.

In response, I constructed what I refer to as "digital tours" (Figure 22). As a metaphor, the term "tour" suggests a degree of freedom, while still retaining an authorial presence. Just as one might wander through a museum, at times following a guide and at other times exploring exhibits alone, so too might the user of the prototype— following the author's interpretation or exploring the data in a more idiosyncratic manner.

Each tour within *The Congo Prototype* follows a slightly different linking structure, some offering the user greater freedom to explore, while others limit linking options to maintain coherence. For example, *The History Tour* follows a very linear linking structure, much like Biela et al. (1999) and Coover (2003), in which comments are connected to specific media support: text, photographs, and video (Figure 23).

This more linear approach was selected because of the nature of the content. Historical accounts lend themselves to a chronology. Certainly, there are other possible structures, yet by and large, when one provides introductory, historical information, it is generally presented in a linear fashion. Additionally, it seemed important to limit linking options to provide an historical foundation that would aid the user in later, more exploratory tours.

By way of contrast, the interface for *The Museum Tour* allows the user greater freedom to explore links as interest dictates. The contents of the tour are organized around the displays as they appear in the Royal Museum for Central Africa. Individual artifacts have been placed within a table. The left hand column includes the visual displays, and the right hand column contains textual information as it appears on related placards. With this approach, the order of the digital tour mirrors the structure of the RMCA.

Unlike the physical space, I provide several additional interactive features, including an "audio guide" (Figure 24). This digital file provides audio commentary such as descriptions of the physical space, facts uncovered during interviews, and personal reactions. Additionally, other links lead to interviews with museum experts and colonial veterans. Most importantly for the present study, each of the digital displays is self-

contained. This means that the user is not required to move through the tour in a prespecified order. One can wander through the various images without disrupting the coherence of the overall narrative.

This selective application of multilinearity seems to be an important aspect of ethnographic hypertexts. Just as a print-based author makes choices such as voice and style, the hypertext-based author must determine how multilinearity will affect the presentation of data. In the case of *The Congo Prototype*, at times, linearity was required, as was the case with *The History Tour*. At other times, the content called for a more branching structure. In short, as a response to previous works, authors of ethnographic hypertexts should understand how the overall purpose of a given essay should drive design choices.

Multivocality and Design Features

One of the hallmarks of contemporary ethnographic works stems from their attempt to incorporate multiple voices, including participants, within a given study (Alcoff, 1992). Hypertext documents provide a potentially useful method to achieve this goal because, as part of their branching structures, it becomes possible to represent more than one narrative (Dicks et al., 2005). As described below, the three cited ethnographic hypertexts attempt to perform multivocality by creating documents that provide multiple versions of cultural practice, developing new multi-tiered layouts, and linking to online discussion forums.

Perhaps, due to the time period in which it was created, *Yanomamo Interactive: The Ax Fight* contains very few examples in which indigenous participants are given voice to describe their understanding of cultural practice. The authors, on the other hand, provide

extensive analysis with heavy-handed voice-over narration, in both film and interactive work. For example, note the tone within the following short quotation:

> The fight seems as though it were over at this point. However, Sinabimi's husband, Yoinakuwa, and his brother Kebowa, are not going to allow it to end and they fetch their axes and machetes. Although it was Yoinakuwa's wife, Sinabimi, that was beaten by Mohesiwa, it is Kebowa who wants to settle the matter with his ax. Kebowa attacks Mohesiwa, but Mohesiwa's kinswomen seize the ax handle and try to prevent him from striking. (Biela et al., 1999, Chagnon Narration)

This description may, in fact, be an accurate representation of the material reality as viewed by Chagnon, yet other participants' perspectives would enrich the work. In this sense, *Yanomamo Interactive: The Ax Fight* feels dated in its apparent objectivity. This is not to say that the work is without merit. The authors include several design features that have the potential to add a degree of multivocality to the study.

As part of the presentation, Biela et al. (1999) provide several different interpretations of the fight. For example, the user can access a transcription of Dr. Chagnon's explanation of the ax fight, as recorded weeks after the original footage was shot. Other portions of the disk contain a second interpretation that was recorded some years later. It is interesting to note how the two accounts differ. In this way, the authors hint at the contingency of interpretation, depending upon time and location. This feature could be further enhanced if the same sorts of accounts had been collected from the participants.

Coover (2003), in *The Harvest*, approaches multivocality in a similar fashion, but rather than linking to secondary sources, he utilizes a table-based layout (Figure 25). His design includes four rows that are meant to scroll horizontally (Figure 25). Each tier of the table contains a description of a wine harvest written in a slightly different rhetorical style. The top row contains photographs, the second row houses "objective" details, such

as times and locations, the third row include poetic musings from the author, and the fourth row highlights the participants' perceptions. With the horizontal design, the user can visually jump between the four types of information by scanning back and forth between photograph and data.

This design represents an improvement over the Biela et al. (1999) approach. Note the inclusion of the participant's perspective in the following passage:

> In the vines one day, Aubert de Villaine tells me that for him, "Wine is an image," by which he means, as he goes on to say, that each aspect of winemaking is part of a process of working toward an ideal form. The image, he tells me, is "based on the wines that he has known in the past." His goal is to make wine in 'the simplest ways possible' to yield a product that is pure. (Coover, 2003, The Harvest, par. 1)

As is always the case, the description is filtered through the researcher's subjective lens; however, its mere presence adds a degree of authenticity to the account. Coupled with the researcher's comments, the four-rowed design supports a more multivocal presentation.

Of the three examples, Ruby (2005) offers the most overt attempt to include participants' voices within his study. Since beginning his project, he has maintained a website where he publishes periodic updates, associated research papers, and a discussion board where participants can post their responses to his work (Figure 26). With the inclusion of these comments, some scholars believe that Ruby (2005) has achieved the kind of multivocality that has been promoted for the last decade (Pink, 2007).

Although Ruby's (2005) technique is progressive, one may question its effectiveness. As an additional feature outside of the published disk, it plays a subservient role to the overall text. Additionally, since Ruby (2005) finished the work several years ago, updates seldom appear within the site. Although an interesting idea, Ruby's (2005)

discussion board falls short of true multivocality. Instead, it seems to be a superfluous feature that few readers will access.

Implications

- Incorporate multivocality by including various voices throughout the study, paying particular attention to the inclusion of participant interpretations (Biela et al., 1999)
- Consider layout as a means of improving upon multivocality (Coover, 2003)
- Include multivocal elements throughout the design rather than as an add-on feature (Ruby, 2005)

Application of Multivocality Within the Congo Prototype

During coding of my raw data, it became clear that participants expressed conflicting notions over what constituted the historical reality of the period under question. In terms of multivocality, the most pressing issue became how to incorporate these conflicting accounts into the study and still maintain a coherent argument. At the same time, I hoped to include these voices as a central feature of the overall narrative, rather than as an add-on that users would more than likely ignore. To address these issues, like Coover (2003), I turned to the layout of the page as a means of including the various voices.

The History Tour represents the best example of these practices. As with all three of the cited studies, the tour includes numerous multimedia links, yet unlike previous studies, each of the links has been color coded, based upon the type of information to which they lead (Figure 27). For example, information that supports the claims of the text has been coded in the color brown. When participants provide counter arguments,

then the associated links are coded in red. Theoretical links are coded in purple. And finally, any hypertext links that lead to working definitions have been coded in yellow. In terms of multivocality, the real power of this approach comes from the use of the counter-argument links. Instead of presenting a unified argument, free from the perils of disagreement, the document demonstrates that within a given study, even one as codified as history, there is a great deal of discussion and disagreement. For example, as shown in Figure 28, the user might open various counter-argument links as a way of comparing claims. In this sense, a level of complexity becomes part of the structure of the document in which the various participants are given voice to express their interpretations of historical events.

The coding system results in several other related benefits. Most researchers will recall the experience of reading a particularly meaningful passage from a journal article. In isolation, the passage is interesting, yet it does not achieve its full impact until it is read within the context of a specific example. Even more surprisingly, the same passage may mean something completely different when applied to another text. The design of *The History Tour* encourages this kind of meaningful juxtaposition of data. The user might open important links, whether they are theory-based, a definition, or a counter-argument. If the link has particular relevance, then the reader might keep it open to foreground a concept within the reading of other passages (Figure 29).

Following a similar design approach, the document aids the user to make connections that are not necessarily included within the author's discussion. For example, the user might open a counter-claim video clip concerning the import taxes as levied by Leopold II and place it to the side to be considered at a later point in the reading. Afterwards, one

might view a photograph of a monument that has been constructed as a result of the incredible wealth that came from the Congo. Again, the photograph is left open for later analysis. Finally, the reader discovers a support link that describes the monetary system as developed in the Congo. Together, these three elements form a new sequence, one that has largely been constructed by the reader (Figure 29). In this way, *The History Tour* builds upon the idea of montage as described by Coover (2003).

Multimodality and Design Features

Each of the cited examples provides ample multimodal resources to support individual claims. At the same time, the methods employed to display these elements vary in approach and content. In this section, each approach is considered. Because Biela et al. (1999) built their ethnographic hypertext from a preexisting 16mm film, the project inherently possesses a degree of multimodality. The film footage can be accessed in its entirety (Figure 30), or from within the written text, by utilizing the footnoting method mentioned previously.

Additionally, the authors incorporate numerous photographs and illustrations, such as maps of the surrounding territory and village, as well as a series of images that were taken during the researchers' extended stay with the tribe (Figures 31 and 32). These images can be viewed by selecting from a gallery list that consists of a brief description of the photograph, an identification number, and the linked image (Figure 33).

Along with the various photographs, Biela et al. (1999) update traditional graphic display formats for an interactive environment. For example, the user can view a kinship chart in which each participant's name has been hyperlinked to a photograph, biography, and a description of genealogical relationships (Figure 34). This chart is an especially

useful feature because members of the tribe chose allegiances, based upon family connections that would be unfamiliar to a typical user. Biela et al. (1999) seem to have achieved a strong mix of media types, which provide multiple representations of depicted events. One potential problem, which will play an ongoing theme in this section, relates to the ways in which the media is unevenly distributed throughout the document. For example, certain sections, such as Chagnon's footnoted transcription contain many video clips, whereas other sections, such as the introduction to the project and secondary analysis, contain relatively few. A more effective design might provide consistent application of media throughout the entire work.

Coover (2003) does a much better job of demonstrating this practice. Each screen includes sounds, videos, and photographs. The user can explore the work, clicking on various images and graphics to uncover hidden media. This can be an exciting and surprising process for the user, one that Coover (2004) describes as being similar to uncovering patterns in the field. Other authors have supported this approach in suggesting that *Cultures in Webs* should be used as a model of how to use multiple media in the presentation of ethnographic data (Pink, 2007).

At the same time, this approach may not be the most effective method for communicating academic arguments. At times, it is unclear how a specific clip relates to overarching claims. For example, when one first enters Coover's (2003) *Concealed Narratives*, the following screen appears (Figure 35). The image in the upper left hand corner contains an interview with a local chief. Within it, he recounts his experiences hunting lions in the field. Yet the screen itself contains very little information regarding how this interview relates to the essay.

In some sense, one could read it as a foreshadowing device, highlighting concepts that will become apparent later, but without more overt authorial presence, the user is left to infer the relationship. This technique may be more appropriate for a creative work rather than one intended to convey scholarly argument. It would be helpful if Coover (2003) provided some visual indicator, whether text, video, audio, etc. that would show the relationship of the media to the interpretation.

Ruby (2005) provides three primary features to incorporate multimedia support for his argument: embedded images, slide shows, and video interviews. Like a traditional text, Ruby (2005) embeds various images throughout his textual presentation. For example, as shown in Figure 36, the text wraps around small icons. When clicked, these images provide a secondary window with a larger version of the image.

Additional images can be found within a feature that Ruby (2005) terms a slide show (Figure 37). These sequences include an index and a series of numbered slides related to a given topic. The study includes two slide shows: one that highlights key locations from within Oak Park, and a second that documents the Civil Rights Movement activities within the area. The slideshow seems to be an appropriate feature, especially within an ethnography in which the physical location plays a prominent role. Ruby (2005) also provides extensive video segments. Each of these clips can be found by accessing a pull-down menu at the top of the screen. Once selected, the user can view complete, unedited interviews with participants (Figure 38).

The accompanying video is shown in a QuickTime movie player, which includes standard video controls: play, pause, stop, and audio levels. Directly below each of these segments, the user can click links that lead to other, related clips. This feature allows

Ruby (2005) to demonstrate the connections between video data as well as textual resources.

Overall, Ruby's (2005) presentation provides excellent media resources, yet they do not seem to be well integrated within the text. For example, the video segments can only be accessed from the pull-down menu. Ruby (2005) might have provided links within the text to the video, which would provide support for his claims. Additionally, because the video footage is unedited, it is unclear which portion of the interviews is significant. As with Coover's (2003) study, the document may overburden the reader to surmise the interpretation.

From an analysis of the three studies, several improvements can be suggested that provide a stronger application of multimodality. Biela et al. (1999) and Ruby (2005) include ample resources, but they are unevenly distributed throughout the work. It would make more sense to place these resources throughout the entire presentation. Additionally, as demonstrated in Coover (2003) and Ruby (2005), video sequences must be edited down to highlight those comments upon which the user should focus.

Implications

- Evenly distribute mediated support throughout the document (Biela et al., 1999)
- Provide visual clues to indicate the type of support to which links might lead (Coover, 2003)
- Edit video sequences to support specific claims. It is not enough to provide complete interview segments. (Ruby, 2005)

Application of Multimodality within the Congo Prototype

As noted, each of the various tours include numerous media types that have been hyperlinked throughout the text, yet unlike the cited studies, I have attempted to distribute these throughout each section to take advantage of the strengths of multimedia documents. This approach is best illustrated within *The Thematic Tour*.

The Thematic Tour presents a comparison of the rhetorical patterns that emerged from an analysis of the exhibits contained within the RMCA and the interviews conducted with the colonial veterans. I hoped to create a design that would facilitate comparison, and at the same time, provide ample multimedia resources as support for the overall argument. When one selects *The Museum Tour* from the main menu, three essays become available: *A Harmonious Existence*, *Nostalgia*, and *A Greater Good* (Figure 39).

Each of these argument-based documents represents an analysis of rhetorical patterns observed at the chosen sites. When clicked, a second screen opens as shown in Figure 40. This document includes the main text within a table format. On the left, one can view the rhetorical pattern as observed during interviews with the colonial veterans, and on the right, similar patterns, as identified within the RMCA. This side-by-side format helps the user visually connect the two patterns. Embedded within the text, one can view small icons that lead to a variety of multimedia resources including photographs, video, interviews, and memos. Each of these options is placed as evidence of the cited rhetorical patterns. This approach is similar to *The History Tour*, but rather than demonstrating disagreement, each media element is included as support for the author's claims.

Unlike the cited examples, when one clicks a particular video clip, interviews appear that have been edited down to their most salient comments (Figure 41). As noted, it is very important that the user understand how the various clips relate to the overall argument. In this sense, the current design builds upon the approach taken by both Coover (2003) and Ruby (2005).

As was the case with *The Museum Tour*, each element can be accessed without leaving the main text, with the exception of the memo links. Because reflexivity becomes such an important aspect of contemporary ethnographic accounts, at key points in the narrative, the user can jump to specific memos that were written during analysis and coding. This feature is particularly useful to demonstrate the process by which conclusions were reached—adding another layer of reflexivity, and as noted in the implications, rather than a text-based memo, each of these documents have been enriched with multimedia resources. The memos include several different fields. At the top of the screen, one can view some of the media elements that were studied before the memo was written (Figure 42).

For example, within Figure 42, the user can view two speeches that were given on the Congolese Day of Independence—one from the Belgian king, and the other from the newly appointed Congolese Prime Minister. Below these representative artifacts appears the text that was written during the analysis stage of the project (Figure 43). This feature is especially useful to provide the user with a better understanding of the ways in which conclusions were reached. Unlike a traditional document, this approach adds a layer of transparency to highlight the interpretive nature of the entire project. At the bottom of the screen appears a small video clip, recorded during analysis of the representative

artifacts. At pivotal points throughout the study, I turned the video camera back on myself to highlight issues of power and struggles that surfaced throughout the study. By including these segments, the document affords unique reflexive moments.

The purpose of this chapter has been to demonstrate the connection between the analysis of key ethnographic hypertexts and the design of *The Congo Prototype*. From this analysis, specific design implications were identified (Table 1). The prototype that accompanies this study provides the opportunity to experience how these implications were utilized. Further, as other scholars begin to explore hypertext as a display format, we will have a larger body of work from which to engage this form in the critical analysis that will allow us to build upon previous designs, rather than re-inventing features with each new work.

Characteristic	*Implication*
Multilinearity	➢ Include multilinearity as appropriate: linear linking for academic arguments (Biella et al., 1999; Coover, 2003) and multilinear for exploratory texts (Ruby, 2005)
Multivocality	➢ Incorporate multivocality by including various voices throughout the study, paying particular attention to the inclusion of participant interpretations (Biela et al., 1999) ➢ Consider layout as a means of improving upon multivocality (Coover, 2003) ➢ Include multivocal elements throughout the design rather than as an add-on feature (Ruby, 2005)
Multimodality	➢ Evenly distribute mediated support throughout the document (Biela et al., 1999) ➢ Provide visual clues to indicate the type of support to which links might lead (Coover, 2003) ➢ Edit video sequences to support specific claims. It is not enough to provide complete interview segments. (Ruby, 2005)

Table 1: Design Implications

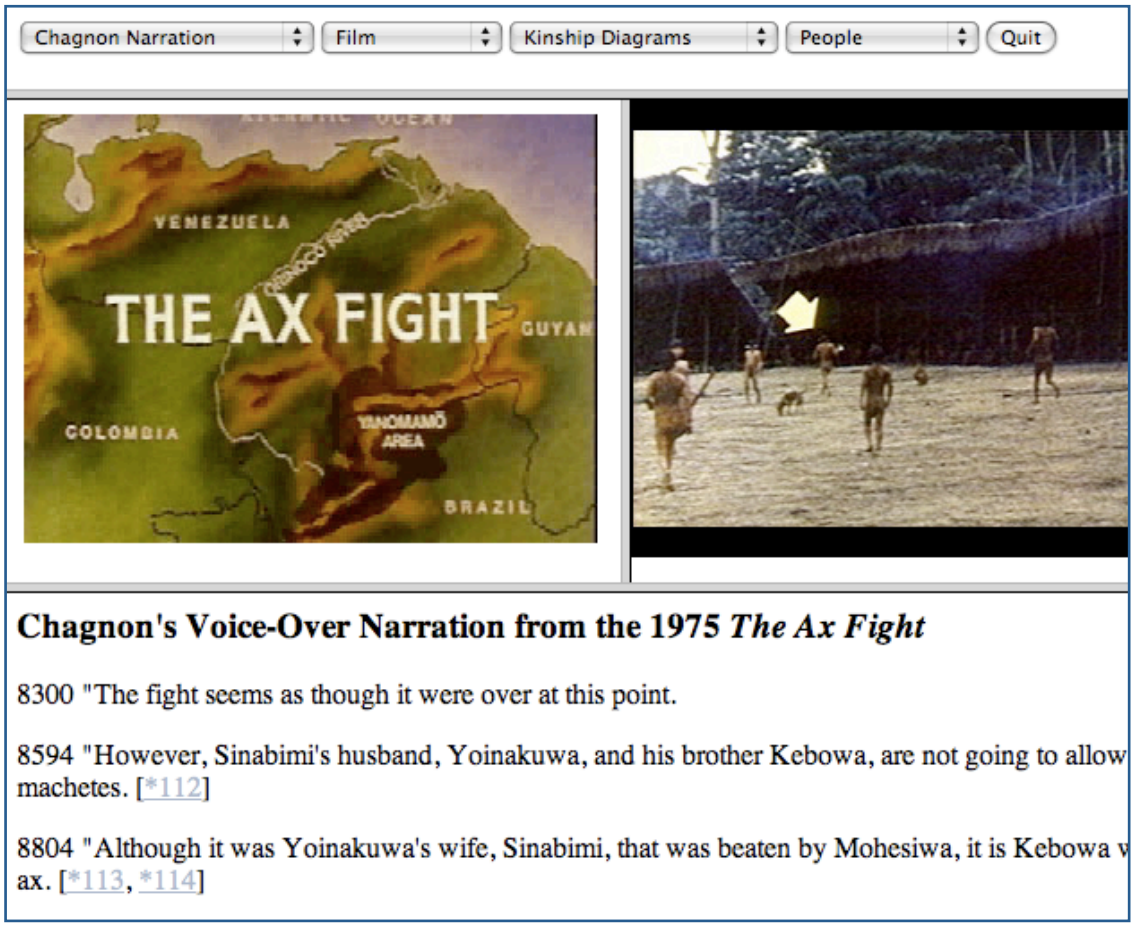


Figure 19: Yanomamo Interactive, Main Interface

Figure 20: Cultures in Webs Interface Design

Figure 21: Rebekah and Sophie Interface

Figure 22: The Congo Prototype "Tours"

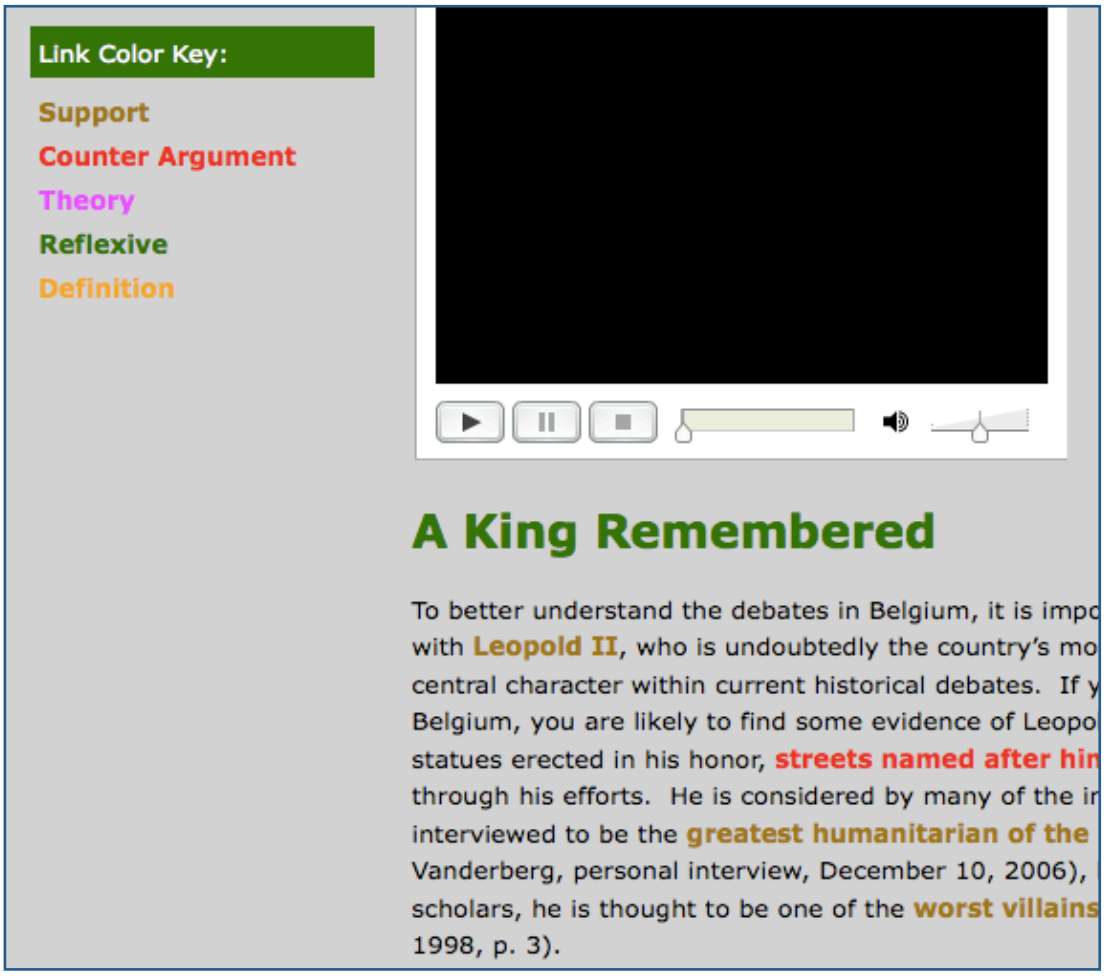
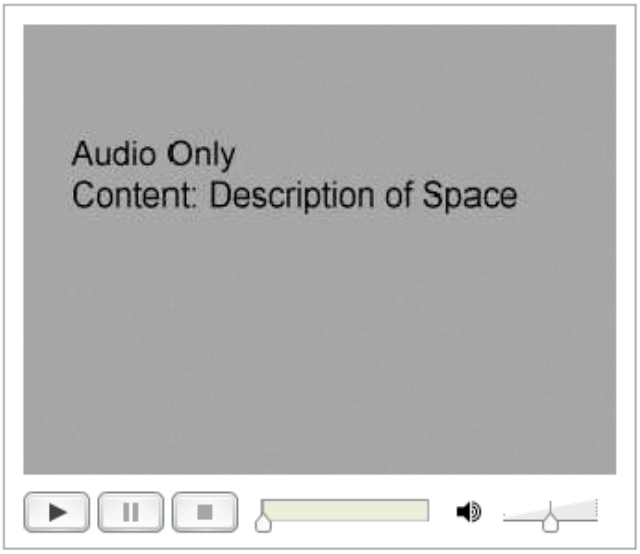


Figure 23: History Tour

Museum Text

A brief period in a long history, the colonization of the Congo by Belgium profoundly affected both countries. Its heritage still endures. Following the exhibition entitled, 'Memory of the Congo. The Colonial Era,' the Museum intends to continue its reflections on this complex period. The history we are exhibiting without claiming to be exhaustive, is a history experienced differently but shared by Belgians and Congolese alilke; it is a history where passions and emotions live on to this day.

Audio Guide



Links

- Dr. Guido Gryseels, Diretor of RMCA
  (origins of the museum and exhibit)
- Ludo De Witte, Author of "The Assassination of Lumumba"
  (reaction to the Congo exhibit)
- Professor Karel Arnaut, Professor of African Studies
  (evolution of the museum exhibit)

Figure 24: Museum Tour

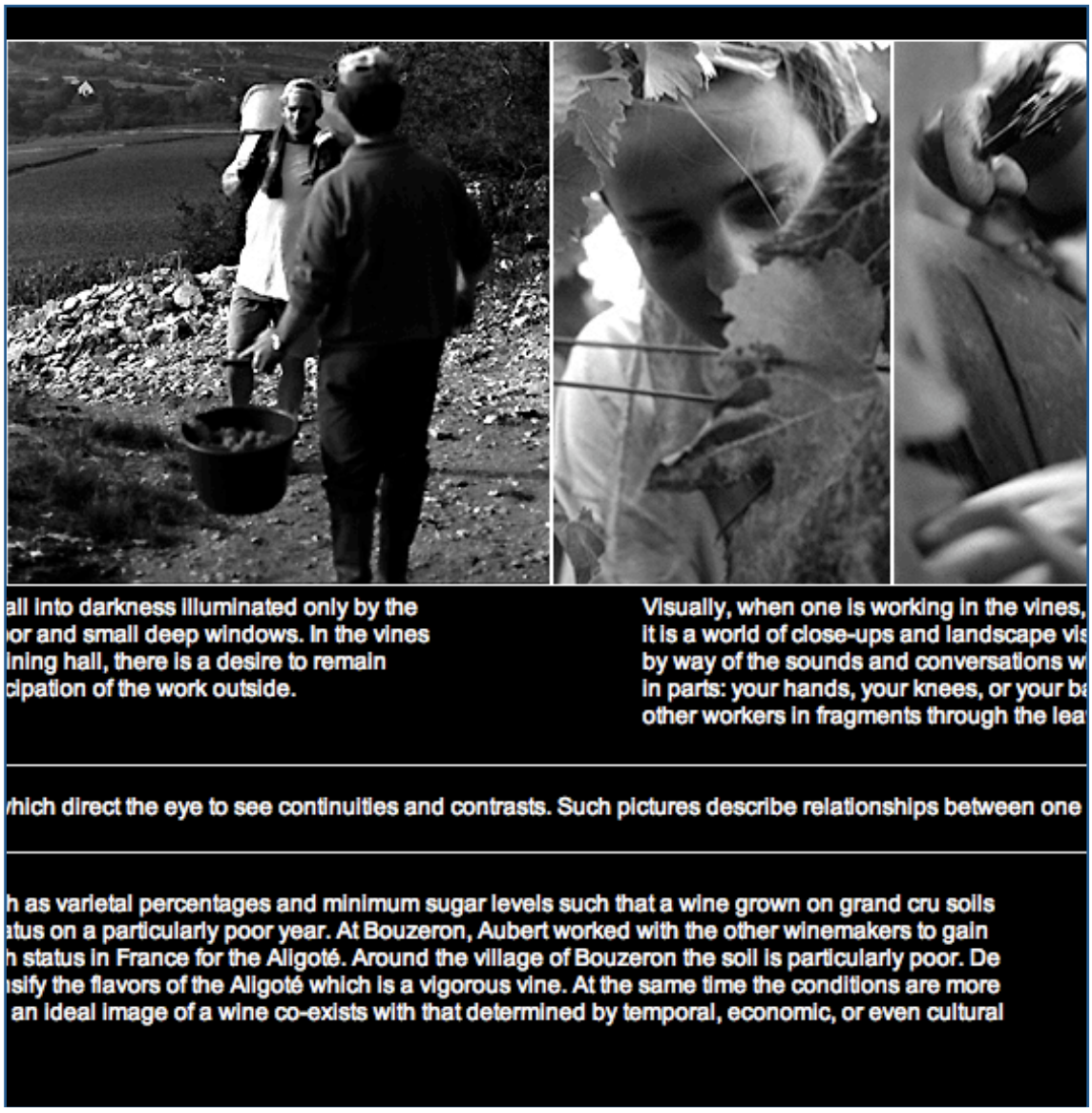


Figure 25: Multilinear Screen Design

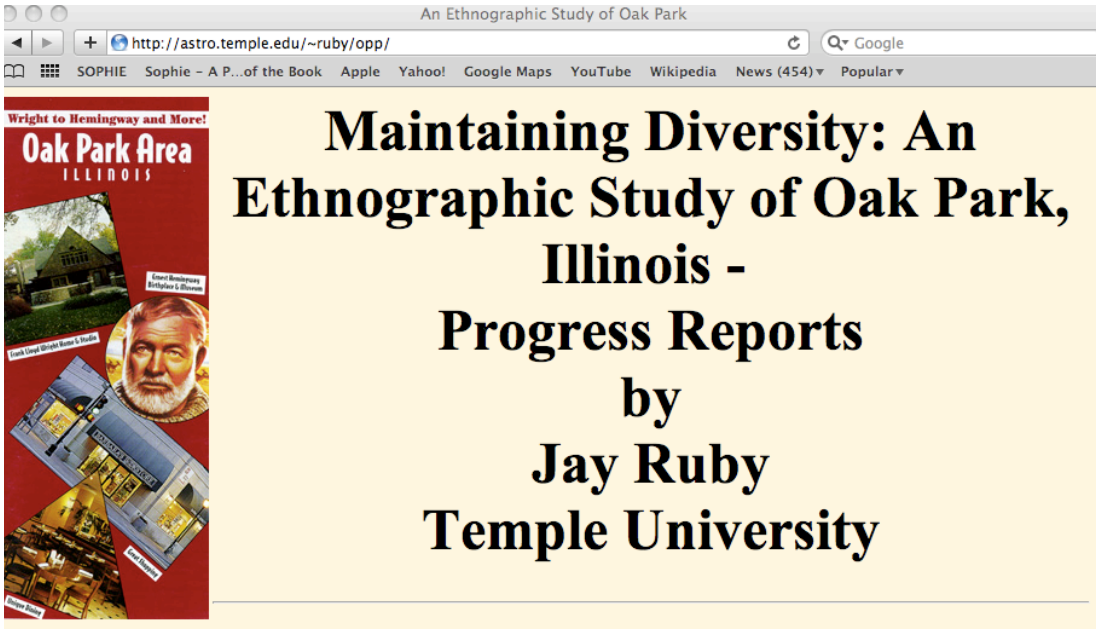


Figure 26: Ruby's Accompanying Web Site

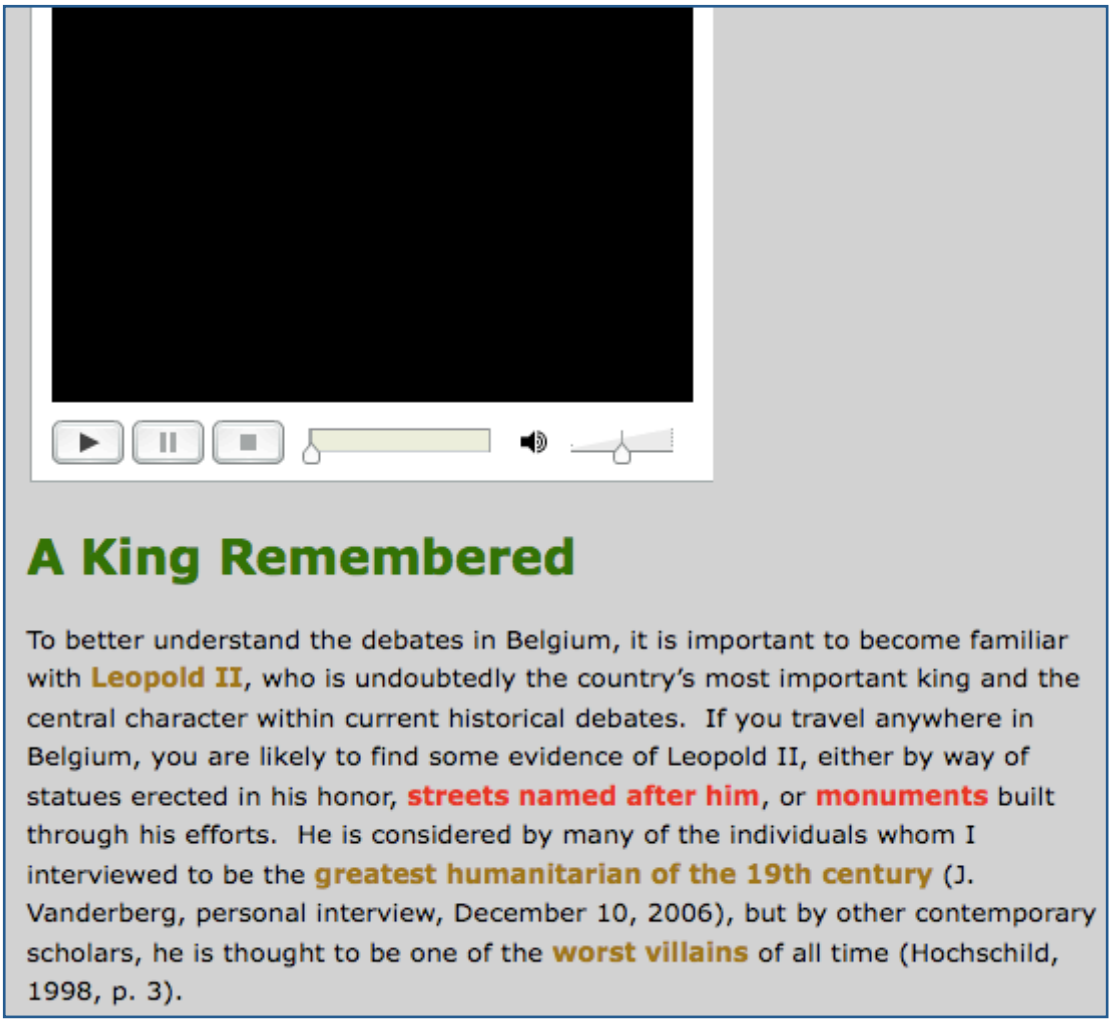


Figure 27: Congo Prototype Coded Links

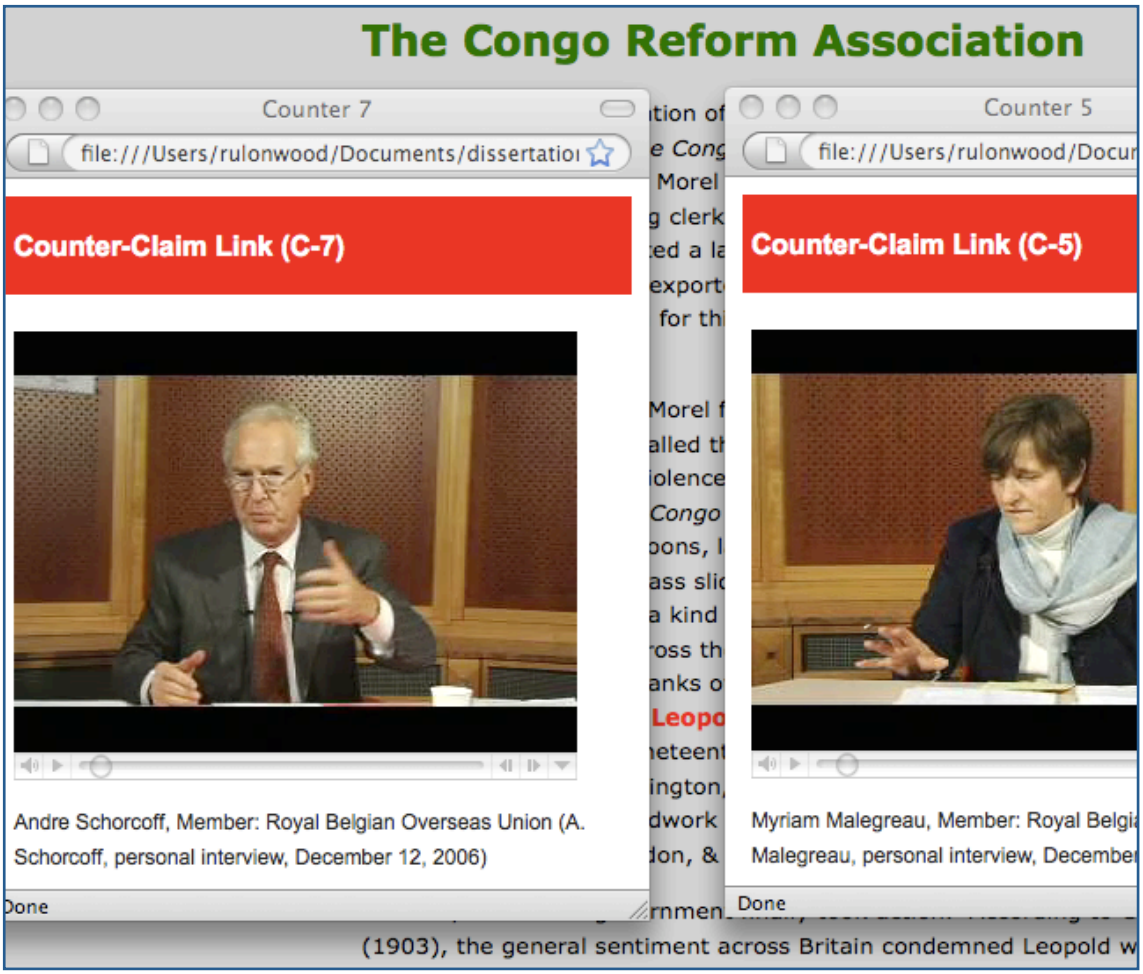


Figure 28: Congo Prototype Counter-Claims

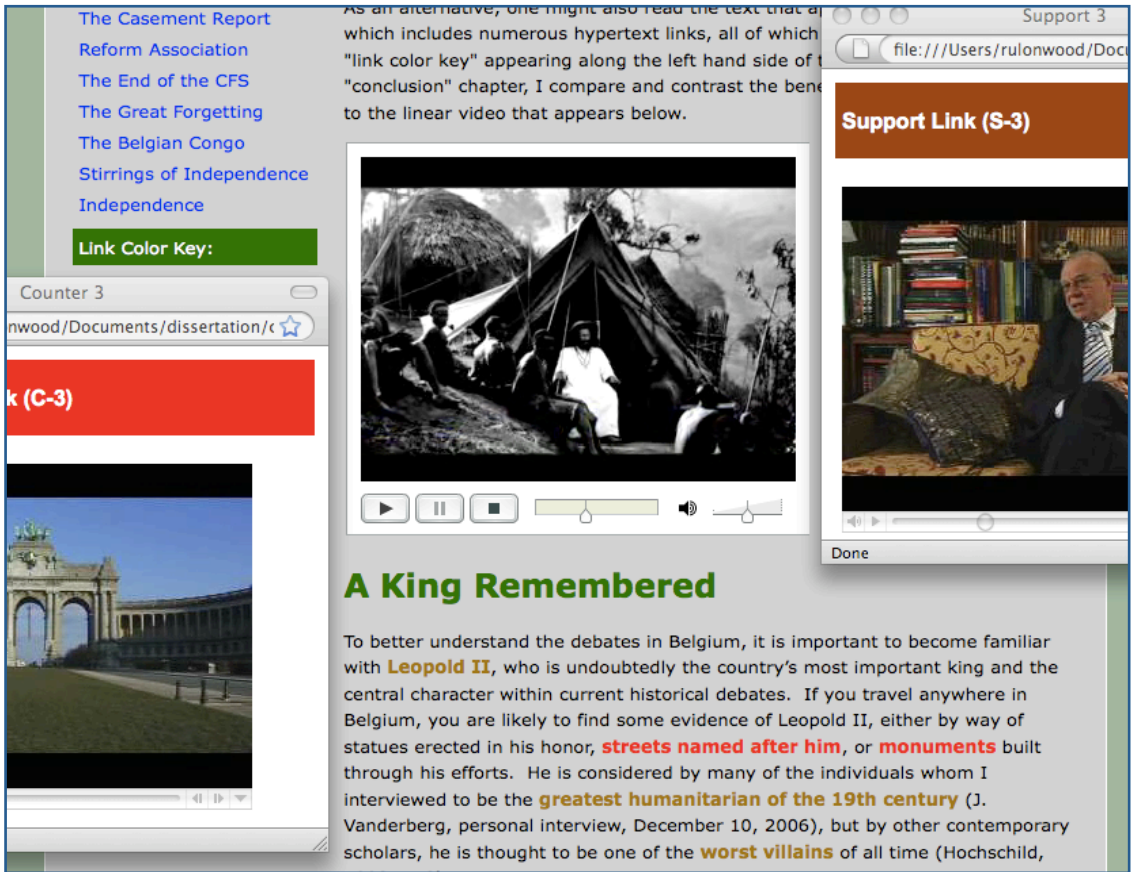


Figure 29: Congo Prototype Montage Technique

Figure 30: The Ax Fight

Figure 31: Timothy Asch

Figure 32: Yanomamo Mother and Daughter

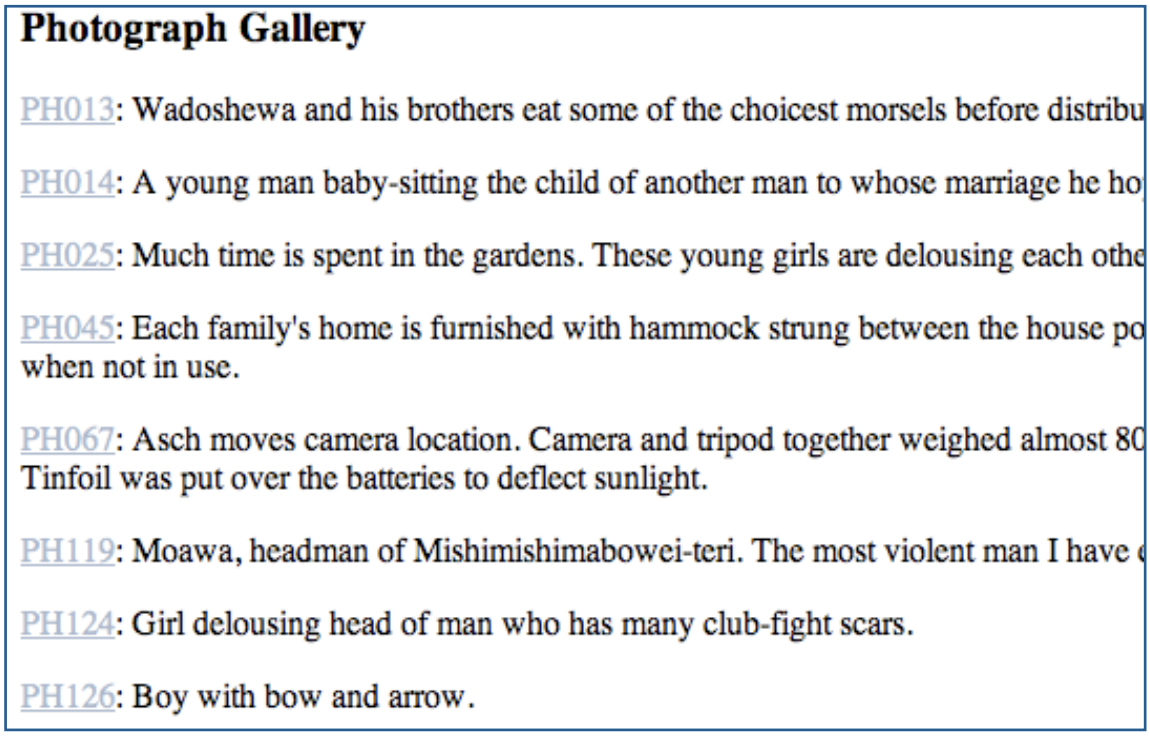


Figure 33: Photo Gallery Interface

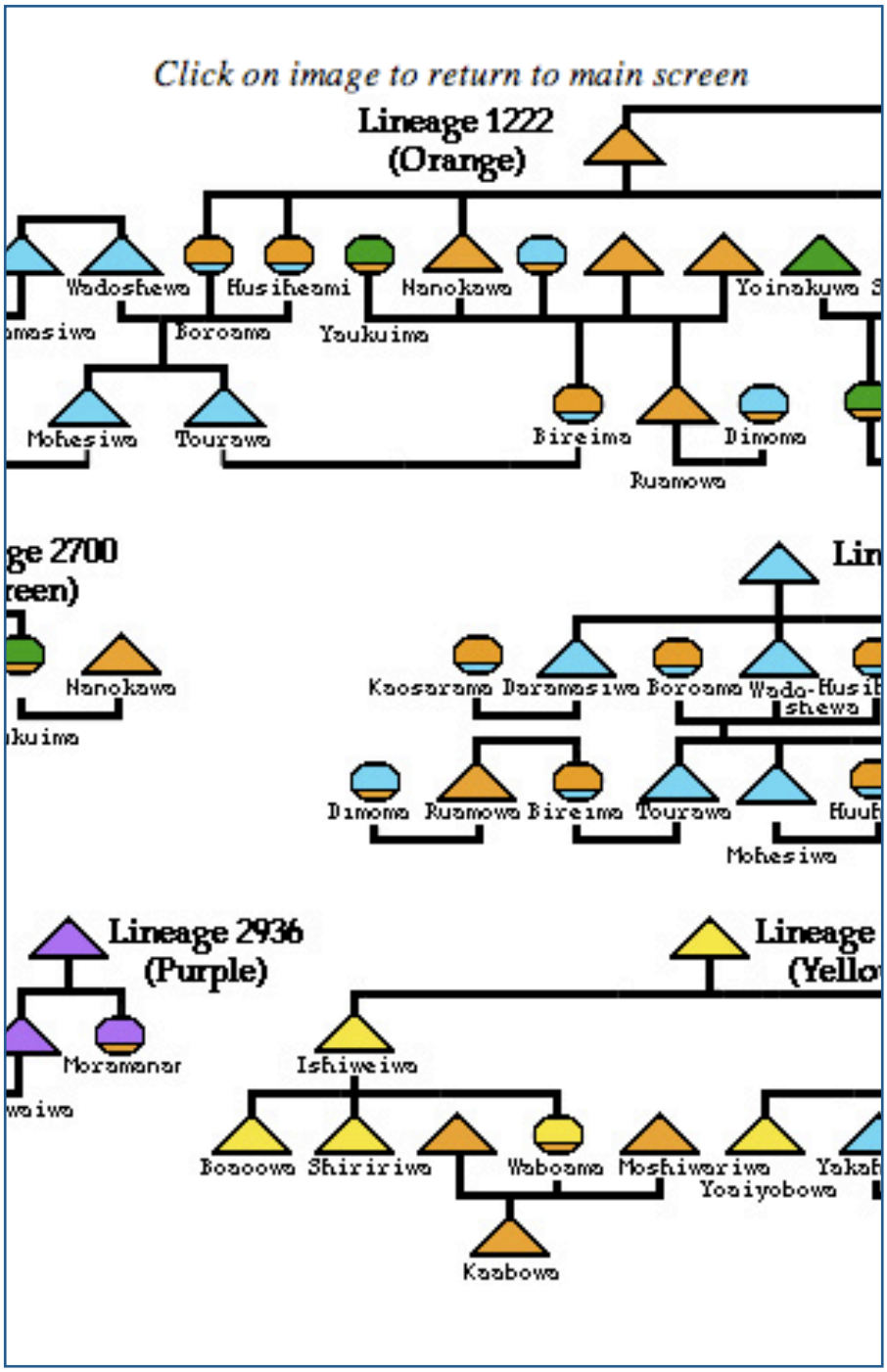


Figure 34: Yanomamo Interactive, Kinship Chart

Figure 35: Concealed Narratives

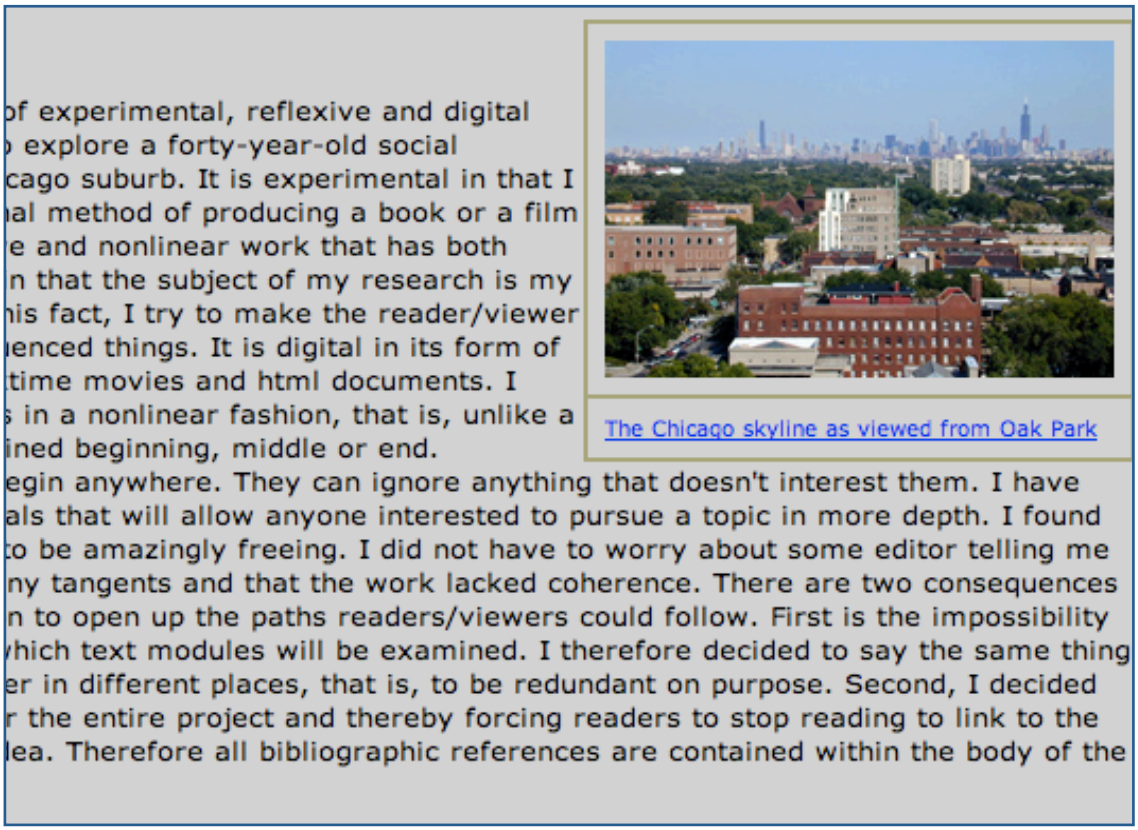


Figure 36: Embedded Images

Figure 37: Slide Show

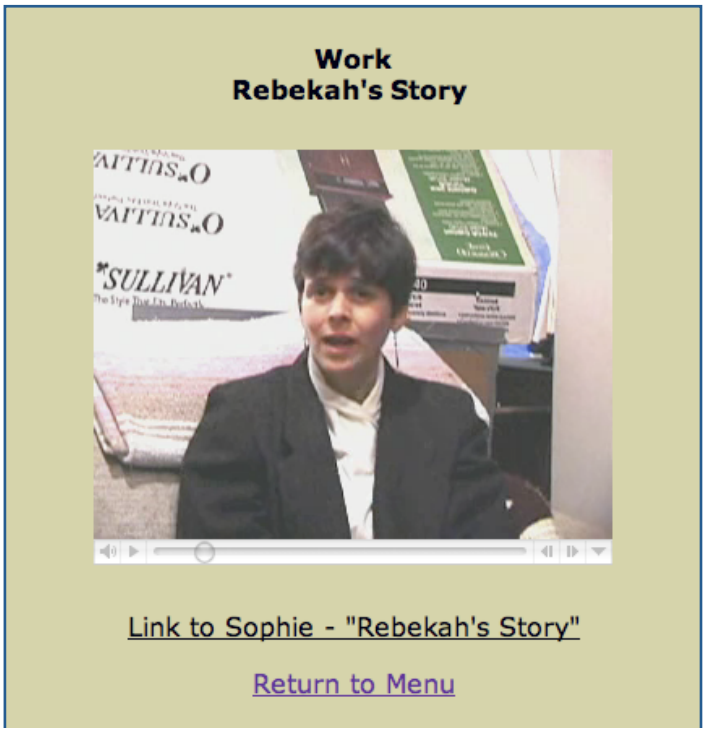


Figure 38: Video Module

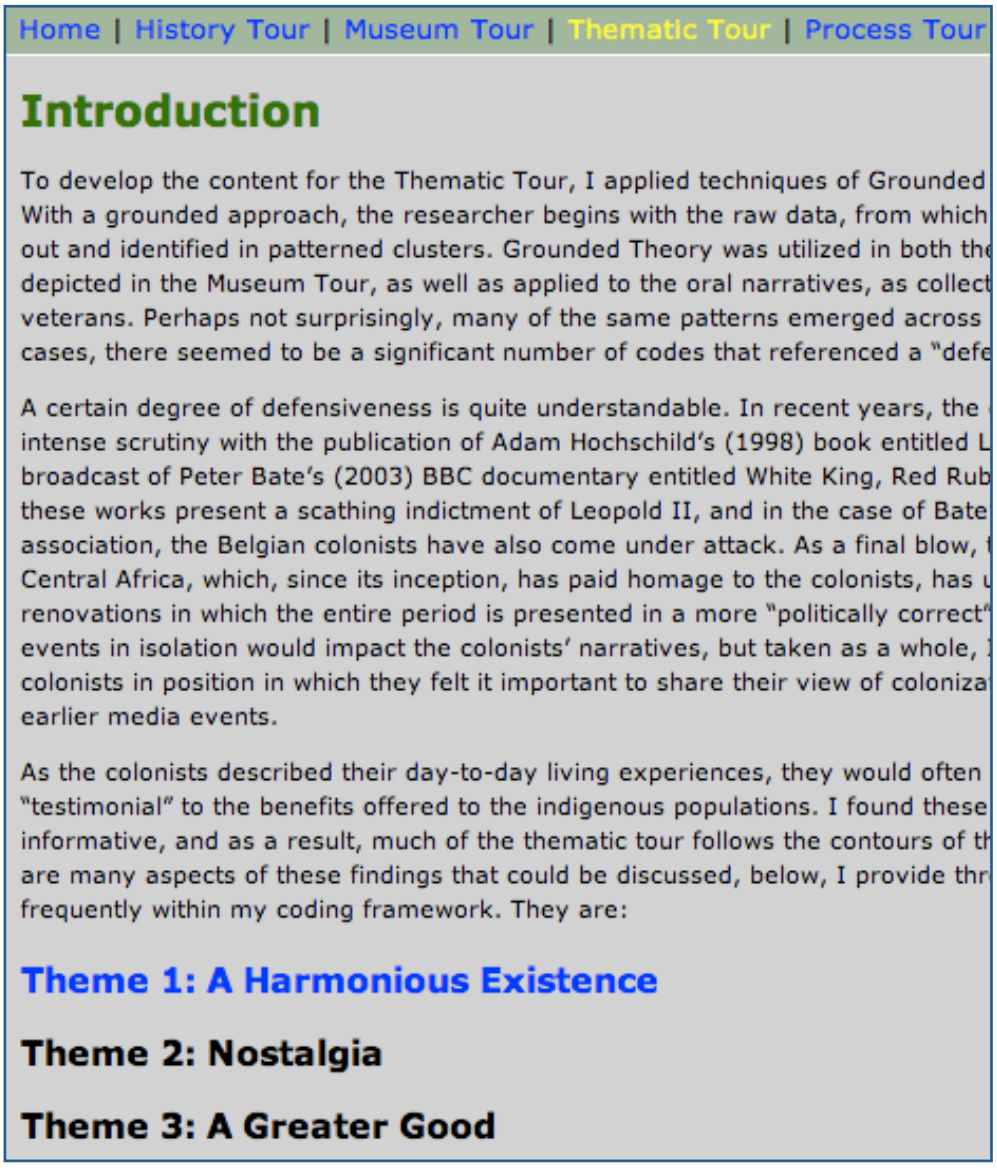


Figure 39: Thematic Section

Figure 40: Split Column Format

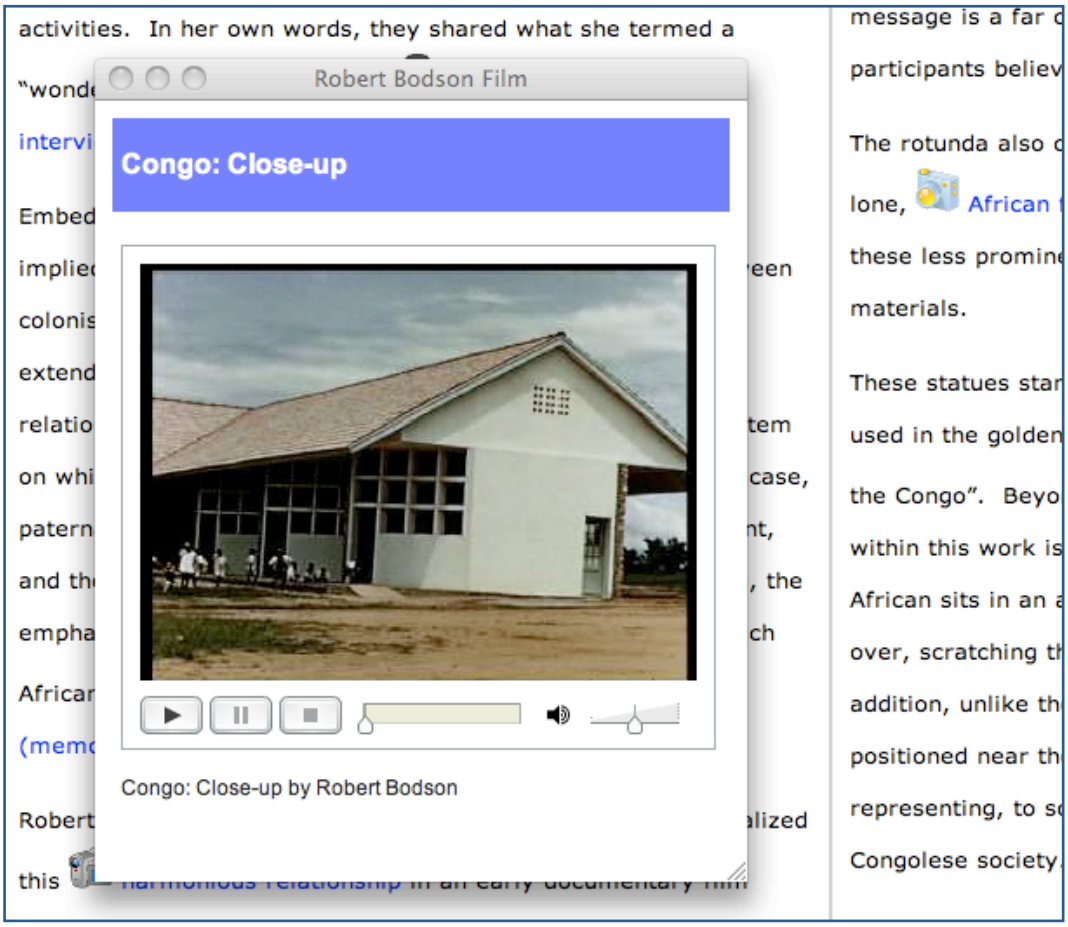


Figure 41: Theme Tour

Figure 42: Multimedia Memo

Analysis

I have begun to analyze several of the speeches that were given at the Inde
determine differences between colonists' and Congolese attitudes. The differ
are quite pronounced. Baudouin discusses the benefits of colonization, while
the colonial rule.

According to my interviewees, Baudouin was so surprised by Lumumba's cor
walk out of the ceremony. This same attitude was detected in Martine's inter
that Lumumba would express such words of hatred toward the colonists.

I wonder how the two groups could have such divergent perspectives and no
colonists must have sensed the animosity that brewed under the surface, ye
this does not seem to be the case. The colonists continue to look back on the
great deal of nostalgia.

Robert Bodson's film includes the same sort of characterization. He, as with
idealized version of society in which both groups lived together in perfect ha

I wonder whether these attitudes have changed since colonization. Do the co
Lumumba's speech as an anomaly, or do they see how it might be possible f
anger?

As the study continues, I will need to look for these same sorts of ideas: per
relationship and changing attitudes among the colonists.

Reflexive Interlude

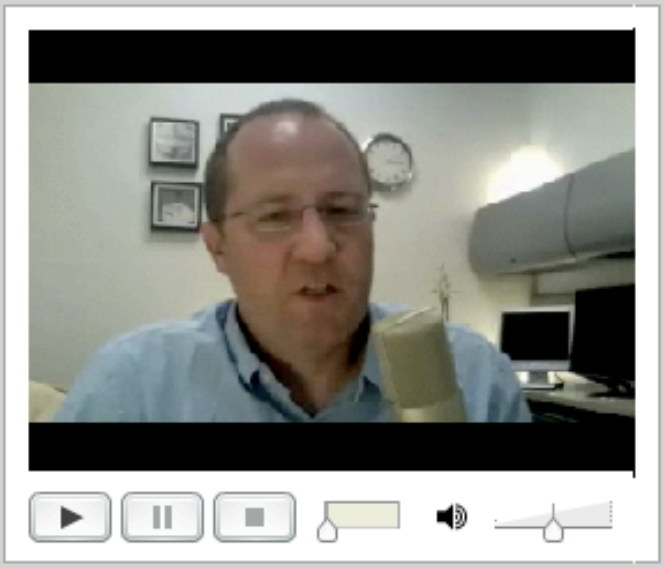


Figure 13: Process Tour Sample Memo

CHAPTER 4

SUMMARY, DISCUSSION, FUTURE RESEARCH, AND FINAL THOUGHTS

Summary of the Study

The purpose of this study was to explore the ways in which ethnographic data might be represented within a hypertext format. To begin, I examined the historical roots of the technology to identify key characteristics that differentiated it from other media. Three characteristics surfaced through this analysis: multilinearity, multivocality, and multimodality. As I read the related scholarly literature, it became clear that some researchers believe that these characteristics change the ways in which we engage with texts, both as readers and writers (Landow, 1992). Other critics make even stronger claims, suggesting that hypertext should be viewed as a new literary paradigm, one that rivals Gutenberg in its importance (Bolter, 1992). Ethnographic researchers, as well, view the technology as an important tool for the representation of data by asserting that it might allow us to address the crisis of representation in unique ways (Coover, 2004; Pink, 2007; Ruby, 2005). Yet rather than taking these claims at face value, it became important to analyze them from a more critical stance to determine what is possible in practice.

To this end, each characteristic was considered within the context of ethnographic representation. This analysis provided a set of general principles that might be followed in the development of ethnographic hypertexts. It was determined that multilinearity

offers important benefits to the writer, particularly when one wishes to present diverse interpretations of a given event; however, these benefits should not negate the importance of a coherent argument (Pope, 2010). Further, it was shown that highly linked hypertexts often deprive the reader of narrative pleasure associated with print-based documents (Pope, 2010). As noted, Dicks et al. (2005) offer a solution to this problem by suggesting that ethnographic hypertexts should be carefully sequenced to offer the reader a coherent argument, but at the same time, they should provide the reader some freedom to explore the document in a more idiosyncratic fashion through linked digressions.

The same sorts of principles were also identified for multivocality. Although some researchers claim that hypertext offers greater potential for multivocality than print-based works (Pink, 2007), in practice, this did not seem to be the case. For example, Pink (2007) claims that Ruby's (2005) study entitled *Rebekah and Sophie* achieves multivocality through the use of a discussion board in which participants are encouraged to comment on his findings. It was suggested that this is indeed a good use of the technology and provides a level of complexity not available within print-based works, yet because the discussion board exists as an ancillary document, participants are rather limited in how they can contribute. This is not to say that greater potential does not exist. As will be described in the discussion section of this chapter, future works may afford opportunity for a more equitable collaboration between researcher and participant, resulting in a higher degree of multivocality.

Of the three characteristics, multimodality appeared to offer the most substantial contribution to ethnographic representation. As researchers, we collect data within a multimodal world, and it seems reasonable to present that data through a variety of media

including text, graphics, video, audio, and animation. Further, with the inclusion of various media types, the writer can utilize the best medium for a given rhetorical purpose. For example, if one wishes to describe voice inflection, it is often useful to provide the user with audio clips to highlight observations. In the same way, if one describes body language, then video may prove to be a useful tool. As a cautionary note, it was stated that one should not assume that a video or audio clip is somehow closer to the material reality of the field. Instead, these media merely afford different modes of representation.

Once these guiding principles had been established, I then began the process of developing a prototype that could demonstrate them in concrete terms. To operationalize the principles outlined above, I identified a site of considerable controversy, *The Royal Museum for Central Africa* (RMCA). The RMCA houses exhibits that depict Belgium's activities in the Congo, including the period in which Leopold II established the Congo Free State. Under the guise of humanitarianism, Leopold II administered a reign in which some historians suggest that millions of Congolese citizens lost their lives (Hochschild, 1998). In response to these claims, veterans, who served in later periods of colonization, state that Leopold II should be viewed as one of greatest humanitarians of the 19th century. With such varied opinions, the museum became a useful site to test the limits of hypertext to contain multiple interpretations of historical events.

On two separate trips to Belgium, the museum was carefully photographed and key administrators were interviewed to get a sense of how the exhibits have been updated during the past several years. In addition, interviews were conducted with 23 colonial veterans who had served in the Congo during the last decades before Independence. Each of these media elements was carefully coded, following the grounded approach to

ethnographic data as outlined by Strauss and Corbin (1990). From this analysis, patterns began to emerge related to the ways in which colonialism is performed within the RMCA and conveyed through the stories of the veterans.

At this point in the project, I had the materials to produce an ethnographic hypertext, yet questions remained concerning the most appropriate features to implement the design of the prototype. To this end, I located three well-known ethnographic hypertexts: Peter Biella, Napoleon Chagnon, and Gary Seaman's (1999) *Yanomamo Interactive: The Ax Fight*; Roderick Coover's (2003) *Cultures in Webs*; and Jay Ruby's (2005) *Rebekah and Sophie*. Each of these studies was systematically analyzed to determine which design features had been utilized and how they could be improved upon in the creation of *The Congo Prototype*. The importance of this stage cannot be overstated. In reviewing previous works, it seems that authors tends to include different features to address similar problems. There appears to be very little cross-pollination of innovative ideas. This is perhaps a normal phase of any technological development; however, we may be able to further the genre by replicating features that work well and improving upon those that are less effective.

A brief example helps to highlight this process. In analyzing Coover's (2003) *The Harvest*, it was determined that he made very good use of layout as a means of representing multiple voices within a single work. He accomplished this task by utilizing a table-based format, with each row of the table containing different interpretations of a given phenomenon. Although not necessarily technologically driven, the idea seemed to be a powerful means to show the complexity of ethnographic discourse.

As a direct result of the analysis of Coover's (2003) feature, I considered visual layout as a means of addressing the same problem within *The Congo Prototype*. Like Coover (2003), I hoped to provide cues to alert the reader to the various interpretations. Coover's (2003) table worked well in this capacity, yet it required the user to scroll across the page horizontally—a convention that may be foreign to many web users. As a result, *The Congo Prototype* includes a color-coding system to represent the various voices within the study—brown are provided for interview segments that support the central narrative and red for those that offer a different analysis. This technique offers the user the same multi-voiced narrative as included in Coover's (2003) approach; however, the linking convention tends to be more familiar to web savvy readers. Without the foundation of Coover's (2003) study, it is doubtful that this feature would play a role in *The Congo Prototype*. In the same fashion, it is recommended that future authors continue this practice in which each new work builds upon its predecessors. For a complete list of the design specifications as derived from previous works, refer to Chapter 3: Analysis of Design Features.

From the analysis of these features, I then created a set of design specifications, which led to the development phase of *The Congo Prototype*. This phase of the project took considerable time and effort. Like a traditional ethnography, the accompanying text had to be written. Yet unlike a print-based work, textual passages had to be specified which would be connected to related media. Then, by sifting through the coded materials, I extracted referenced images and video clips from the original source material to be embedded within the prototype. To offer the greatest degree of accessibility to users, the final project was constructed as a web site, which can be viewed by readers of

this document, along with those who may have an interest in colonization or ethnographic representation.

Discussion

One of the most important lessons that have been gleaned through this study is the realization that when one begins to develop ethnographic hypertexts a number of powerful tensions that effect the representation of ethnographic data surface. The technology, for example, provides the user with the freedom to explore documents in a random order (multilinearity); however, it is somewhat unclear if relinquishing control of the narrative is necessarily a productive characteristic of ethnographic writing. Similarly, multivocality seems to be a desired feature of ethnographic writing (Pink, 2007), yet in practice, due to academic convention, readers expect a strong interpretive lens by which the user can better understand a cultural phenomenon. Finally, hypertext provides the author with unlimited capacity to include all of the materials related to a given study, but at the same time, through the inclusion of raw data, the burden of interpretation shifts from the author to the user—again, a tension that has great potential, yet may introduce significant difficulties when applied to ethnographic works.

In the paragraphs that follow, each of these tensions is outlined to provide the reader with an understanding of how they might be configured in a productive manner. This discussion is followed by a description of how each tension has been addressed within *The Congo Prototype*, along with suggestions of how future works might build upon this study.

Multilinearity

Tension: Freedom and Control

As a foundational property of hypertext, multilinearity allows the user some freedom to explore documents in a unique order. This characteristic has been deployed in a number of different genres such as hyperfiction in which the user can, to a limited extent, determine the direction of a given plot line. Educational theorists, as well, have noted the benefits of multilinearity to create flexible learning environments (Rouetet al., 1996). Yet it is still somewhat unclear how this same characteristic can best be utilized in argument-based writing of which ethnographic texts are a part.

Academic arguments, due to their claim-based structure, tend to unfold in a very linear progression in which the author leads the reader, point by point, to a logical conclusion. In this sense, linearity epitomizes much of what we have come to accept as academic writing. One of the most important challenges we face as writers of ethnographic hypertext is how best to balance the freedom offered by the new technology against the requirements for authorial control within academic writing.

In the case of *The Congo Prototype*, it was determined that the best way to address this tension was through the strategic application of multilinearity, depending upon the rhetorical purpose of a given section. To determine its use, I relied upon a simple heuristic. If the primary purpose of a given section was to persuade the reader of a specific claim, or if the content inherently possessed a degree of linearity, then multilinearity was limited. If, on the other hand, the purpose of a given section was to allow the reader to experience the data in a more exploratory fashion, then multilinearity was applied more liberally. For example, historical accounts, by their nature, are often

represented as a chronology. This is particularly true of introductory history textbooks. Following this convention, it was determined that multilinearity should be limited within *The History Tour* of the prototype. The links that are included provide the user with multimedia support, yet one never jumps to a secondary document. Other sections of the project follow a more complex linking structure. Within *The Museum Tour*, for example, the interface has been structured as a series of self-contained modules. Each artifact from the physical display can be viewed, along with multimedia resources: audio commentary, links to additional documents, and expert interviews. Because these modules can stand alone, there is little need to follow the document in a prespecified order. Instead, the user can move through the section as interest dictates. Most importantly as an overarching guideline, the author need not be locked into a single linking pattern.

Technologically, the current study addressed the issue of multilinearity in a fairly simple and straightforward fashion through simple linking and .html techniques; however, future studies might benefit from other solutions to maintain this same sort of balance between freedom and control. In the paragraphs that follow, one such option is described. Afterwards, I turn to a solution that is less technologically driven, but would require significant changes to reconfigure what constitutes academic argumentation.

Database Driven Ethnography

One of the most significant developments within current web design practices results from the use of database technology to create dynamic web sites. Unlike a traditional .html page, dynamic sites change, depending upon inquiries from the user. For example, when one accesses an online bank account, a message is sent to a database that houses information related to recent transactions, balances, and interest rates. Once the request

is received, that information is coupled with an .html page and sent back to the user. In this scenario, individual pages are mere shells that can house infinitely configurable data. This same technology might be applied to ethnographic hypertext and would provide both the writer and user with more flexible representations.

In the case of ethnographic hypertexts, the author would create a database containing all of the information related to a given study. This database would be comprised of the raw material from the field, along with the author's interpretation. Beyond the coding that took place during analysis, an additional set of codes would be required. One would include meta-tags, including key words or phrases that could be used for simple searches, along with a numeric system that would provide a means of reconfiguring the elements into corresponding arguments. In this way, evidence could be retrieved from the database, yet it would always be coupled with interpretive information as written by the author—resulting in a useful balance of freedom and control.

In terms of retrieval, a productive way to envision this process is to imagine individual elements as existing on a series of index cards. Some cards would house individual artifacts, whereas others would contain interpretations. Just as occurs in the physical world, these cards could be rearranged in any number of different configurations. If a user were interested in a specific issue, such as yellow fever, then all cards that had been tagged with related search terms could be called up, along with related interpretations by the author. Further, the sequence of cards could be determined, based upon author specifications.

As a real world application, consider the artifacts contained within the RMCA. As one walks through the main hall of the museum, there appears a striking mask that is

carved from heavy, dark wood and painted with numerous red spots. Most of the docents agree that the mask depicts a small pox epidemic that occurred during colonization. As part of a database, this mask would be photographed, coded, and coupled with various interpretations. If the user searched for disease, then the image would appear, along with the docent's interpretation. In other searches, however, the same mask might be coupled with interpretations related to indigenous craftsmanship. In this way, the same materials could be re-purposed into multiple readings, depending upon user-initiated searches.

A database driven ethnography such as the one described offers several benefits. First, each of the sequences would contain both evidence and a strong interpretive framework, which addresses concerns over the coherence of academic arguments. Second, because the database contains such a high degree of configurability, the author might include many more interpretations than exist in a print-based argument or even one that has been built as an .html web site. Third, just as occurs in the banking example at the beginning of this section, the user has much more flexibility to explore the contents of a study than occurs in more traditional methods.

The most challenging aspect of an approach as outlined above results from the creation of the meta-tags as a useful mode of retrieval. In essence, the outlined approach is similar to search engine technology as already utilized as part of the World Wide Web. Companies such as Google, AltaVista, and Ask.com, employ complex algorithms to insure that a given search produces useful results. Additionally, beyond the search engine, web designers currently engage in a practice known as *search engine optimization* in which meta tags, that are most likely to move a given page to the top of a user's search list, are created. In a similar fashion, the author of ethnographic hypertexts

would need to envision those searches that are most likely to occur and place pre-defined meta-tags within given units of text to create useful searches.

Reconfiguration of What Constitutes an Academic Argument

A second way that we might address multilinearity is by re-thinking what constitutes academic writing. Several years ago, David Kolb (1994), a professor of philosophy, developed a hypertext entitled *Socrates in the Labyrinth*. This unique work presents numerous arguments, yet rather than the traditional claim-based structure, Kolb (1994) experiments with different forms of hypertext writing. For example, within his essay entitled *Aristotle Essay*, one can find links to formal arguments, digressive illustrations, related thoughts, and alternative perspectives. Unlike a traditional academic essay, the user is encouraged to explore the text as a kind of meditation on different philosophical topics as opposed to the more traditional claim driven works. It should be noted that writing of this type challenges the author to produce numerous insights and paths through an argument, which is extremely difficult to achieve. Additionally, as arguments branch out into subessays, even short works can grow in size and scope, placing a rather large burden on the author.

Traditional academics, such as Ruby (2005), note the benefits of multilinear writing. For him, when one is not forced to answer to the gatekeepers of academe, new rhetorical forms become possible. According to Ruby (2005), in his *Oak Park Stories*, he had the freedom to explore topics in great detail as hyperlinked digressions, which would not have been acceptable to most traditional editors. He suggests that this more exploratory form of writing may contribute to findings that would not have occurred with traditional print-based models (Ruby, 2005).

And as a final note, several forward-thinking academic outlets have begun to accept submissions that deviate from standard models. For example, The Department of Communication at the University of Utah, publishes a student run journal entitled *The Rocky Mountain Communication Review*. This journal, which is catalogued as part of several academic databases, exists only in a digital form. Additionally, the editors accept scholarship in multiple media formats. Past issues have featured such diverse genres as scholarly performance, digital filmmaking, and poetic hypertexts. Other journals also reflect this trend. *Advertising and Society Review*, a well-known interdisciplinary journal, currently publishes its articles with accompanying digital images and video clips. In short, it seems as though the academic world is slowly changing to accommodate experimental forms of writing, and perhaps, this might open the door to new argument structures as well.

Multivocality

Tension: Inclusion of Multiple Perspectives and the Researcher's Interpretive Lens

Postmodern debates often focus on the need to include indigenous voices within ethnographic practice (Alcoff, 1992). As a response, some hypertext theorists believe that this new technology offers great potential, through collaborative writing, to achieve this goal (Pink, 2007). And yet, to date, there exist very few practical examples of how one might actually create a multivocal document as envisioned by the theorists (Ruby, 2005). The reason for this chasm results from a powerful tension. On the one hand, critical scholars recognize the need to include voices that have traditionally been silenced

(Alcoff, 1992). At the same time, we have come to recognize that even if one includes diverse perspectives, each of these is filtered through the researcher's subjective lens, and in turn, are subsumed by the author's intent (Clifford & Marcus, 1986). Following this reasoning, true multivocality is perhaps more of a theoretical dream than a workable reality.

Within the current study, once this tension was recognized, the focus shifted from the lofty goal of multivocality to the practical implementation of a dialogic document. This realization became somewhat apparent even during the earliest stages of the project. As I recorded various interviews with the participants, it became clear that there was a great deal of disagreement on particular points. For example, when discussing Leopold II, staff members at the museum and Belgian academics voiced strong opinions concerning Leopold's culpability in the deaths of many Congolese. During additional interviews with the colonial veterans, the exact questions elicited a completely different response. Despite being separated by time and distance, I began to view the various interviews as part of an ongoing dialogue between academics and those who had experienced the Congo first hand. This became a fascinating study in the subjectivity of interpretation. As a consequence, I hoped to capture this same sense of dialogue within the ethnographic write-up.

To this end, a fairly conventional account of Belgium's colonial activities was created. Then, at key junctures, recorded interviews were placed as hyperlinks. To create a sense of dialogue, each of these comments was color-coded. Interviews that supported a postcolonial position were coded in brown, whereas clips that provided an alternative perspective were coded in red. With this visual coding system, the user can

easily scan the document and note points of convention on specific interpretations of history.

Although still a far cry from true multivocality, the specified approach does contain a degree of complexity not found in traditional print-based documents. One can, for example, scan the document and select only the red links to gain a sense how colonists view this violent period in history. By the same token, one can select the brown clips and better understand more contemporary views of this very same phenomenon. Additionally, the overall document follows an interesting point/counter point structure in which the various interviews can be seen as engaging in a form of dialogue.

In retrospect, I believe that this color-coding method worked well—both as a navigational device as well as a rhetorical strategy to create a more dialogic document. In reviewing previous works, few studies have made use of visual cues to differentiate the types of information to which links lead. Future studies may benefit from a systematic analysis of the various ways that color-coding may be incorporated in a more sophisticated manner.

It is important that we not abandon the notion of multivocality altogether. Rather, it may be that we need to re-think our approach to this difficult problem. Several recent technological developments may provide reasonable solutions, which may result in greater inclusion of diverse perspectives. In the section that follows, one possible approach is outlined.

Democratization of Technology, Techniques, and Across Study Links

Over the past several decades, the cost of computer and multimedia technologies has dramatically decreased. This trend now makes it possible for numerous individuals to

produce ethnographies, but most significantly, many of these works originate from voices from which we have not heard in the past. By supporting these efforts, we create a stronger sense of multivocality, not within a single work as envisioned by hypertext practitioners (Pink, 2007), but across studies.

There are some detractors who believe that ethnographic work can be conducted only by those who possess the right credentials and academic training (Ruby, 2000); however, to achieve the realization of multivocality, it may be that, as with notions of academic argument structure, we need to expand our ideas of what constitutes scholarship in this changing world.

One of the best ways that we can create a sense of multivocality is by empowering various individuals with the tools and techniques to create their own ethnographies. Documentary filmmakers have already begun the process by placing cameras into the hands of participant communities, and as a result, have produced important works. Coffman (2009) provides an analysis of several documentaries in which cameras were placed into the hands of inner city community members to document the ways in which low income housing is being torn down and replaced with more profitable ventures. The resulting films are being produced by members of the community, rather than by filmmakers who only observe the problems, but do not live them. Through documentary projects of this type, we have gained a better understanding of homelessness, women's issues, and racism, not from the lofty vantage point of the ivory tower, but through the efforts of disenfranchised groups (Coffman, 2009). It seems reasonable that these same sorts of projects might be extended into the realm of ethnographic hypertext. These most recent efforts are still somewhat tentative. It is not enough to simply place technology

into the hands of participants. Ethnographic studies require an interpretation that grows out of a specific vantage point—whether from participant or researcher.

Beyond production, to achieve stronger multivocality, we must also develop a means of accessing and cross-referencing works. Within the ethnographic video world, databases in which one can search for specific topics and access related films now exist (Ethnographic Video Online, 2011), yet as of now, no hypertext equivalents exist. Future studies might catalog ethnographic hypertexts and link them together at key intersections. In this way, we might empower silenced voices and, by connecting studies across the network, achieve a sense of multivocality.

This radical notion will require us to rethink the boundaries of what constitutes the text. It may be that scholarly works need not end after a set number of pages and a bibliography. By connecting these various studies, we extend the scope of our work, and we hope, through these efforts, make a difference in the world around us by including numerous voices in a collective interpretation of culture.

Multimodality

Tension: Storage Capacity and the Need for Precise Interpretation

One of the most important benefits afforded by ethnographic hypertext can be found in the medium's capacity to include multimodal data. With these technologies, we have different methods to describe movement, sound, and even complex three-dimensional processes with animation. Additionally, multimodal technologies allow us to isolate unique moments and describe them in great detail. In short, new rhetorical possibilities

exist when one opts to utilize multiple mediums in the representation of ethnographic data.

Coupled with the technology, recent computer developments offer potentially unlimited storage capacity. One can now digitize hundreds of hours of video on an external hard drive that can be easily transported and shared with other scholars. There is no reason to believe that this capacity might not continue to grow. For the ethnographer, this means that one is not limited in the amount of data that can be included in the final write-up. One might, for example, provide all of the collected materials for a given study so that other scholars might examine the results and assess the veracity of the interpretations.

This notion is a radical departure from current practices of scholarship. In essence, one relinquishes ownership of research materials, which instead, become part of a collective knowledge base. Granted, there are relatively few models in which this has occurred within the academic community; however, the idea of "open sourcing" seems to have gained some traction within the software development industries. The code for the Linux operating system, for example, can be downloaded for free and improved upon by individual programmers. The only stipulation is that changes must be shared with the community at large. By following a similar model in the academic world, we might achieve interesting results.

On the surface, this potential to provide raw data seems to be a strong benefit; however, on closer examination, as with the other characteristics of hypertext, one must carefully assess the potential advantages. In producing *The Congo Prototype*, I struggled to determine the amount of footage to be included with each video segment. If one

includes an entire interview, the user might better understand the context of the participant's response. However, if the author chooses to include an entire interview, it is often unclear which elements deserve attention. In this sense, there exists a strong tension between the possibility to provide large amounts of data and the importance for the author to edit media elements as a form of interpretation.

In the current study, it was determined that the best approach would be to edit media segments to include only those elements that applied to a given section of text. In this way, the burden of interpretation lies with the author as opposed to the user. At the same time, I provided all of the multimedia resources to the academic community so that other scholars might benefit from the same materials. Each of these was placed upon a series of secondary pages, sorted according to tour, and categorized by media format.

As a starting point, the selected method to edit and catalog materials seemed to be a good use of the medium, yet in assessing the direction of future studies, other approaches may also be useful. Based upon my experience as a video editor, one such solution is described, along with a discussion of how future studies might improve upon the reflexive nature of ethnographic hypertexts.

Provide Greater Access to Media with the "Play Around" and Reflexive Techniques

One of the common themes throughout this chapter revolves around the idea that we need not adhere to a single approach or solution. For example, when one determines the amount of video to include in a given video segment, it may not be necessary to rely upon an either/or paradigm. Perhaps, we might envision processes that allow us to combine approaches to address the various tensions. In the case of the degree to which media

should or should not be edited, it may be that future applications could leave this choice to the user—to view the selected segment as established by the author or scan additional portions of the raw media.

Programs such as Adobe Premiere, Avid Express, and Final Cut Pro include a unique feature called the "play around" tool. With this option, the video editor creates an initial edit. Then, by clicking on the "play around" tool, the program will display additional footage beyond what has been included. The user can, for example, play several frames, seconds, or even minutes of video before and after a given edit. In this way, the editor gains a sense of the most appropriate location to cut from one video segment to another. The same approach might be utilized with the media elements contained within an ethnographic hypertext.

With this "play around" approach, the user might select a linked video clip and view it as it was originally edited by the author, or, if the user wished to view the footage before or after a selected segment, just as occurs with the "play around" tool, one might view additional portions of the clip. Essentially, this method would take advantage of the best of both worlds—providing an interpretation through editing, along with more extensive clips when desired.

This same feature could be applied to other media elements beyond video. For example, one could "play around" individual audio segments or view additional photographs that had not been included in the final write-up. As a result, the ethnographic hypertext might provide a degree of reflexivity by allowing the user to examine portions of the study that aren't necessarily part of the author's "polished" write-up. In addition, one may enhance reflexivity with other multimodal techniques.

In the current study, I utilized media technology to produce reflexive moments in ways that had not been explored in previous works. To this end, a reflexive tour was included in which I turned the camera back on myself to describe thoughts and ideas related to the development of the prototype. This technique offers great potential to demonstrate the ways in which hypotheses develop during each stage of a project. This seems to provide a strong reflexive component to any study as envisioned by critical scholars (Ruby, 2000).

Future researchers might apply these same techniques; however, one might improve upon the chosen approach in several ways. First, within the current project, most of the reflexive moments were relegated to a single tour. For a more effective presentation, it would be helpful to provide these same sorts of moments throughout the entire study. Second, I relied primarily upon video as a means of recording thoughts and ideas. As noted, the various multimedia modes offer unique advantages. It makes sense to use each of these elements as a means of recording reflexive moments in the capacity to which they offer the potential benefit: video, audio, images, and text. Future studies may benefit from journal entries, audio recordings, photographs, etc., all included to enhance the reflexive nature of the text.

Summary of Future Research

By way of summary, the following section includes a concise delineation of future areas that merit study. The recommended research emphases can be encompassed within two broad categories: technological and theoretical solutions. Both of these are described below.

Technological

The initial thrust of future research can be seen as a result of decreasing costs in production. If we are to take advantage of the other technological solutions, it is imperative that we provide a means for under representative voices to take part in ethnographic conversations. As a practical first step, it is recommended that future studies engage participants in the production of their own ethnographies. This provides a means to create a degree of multivocality within the discipline as a whole.

As this occurs, we might develop a more flexible means of authoring and viewing the resulting texts. It is recommended that we move, just as has occurred in professional web development, from an .html model to database driven ethnography. With this approach, data can be structured according to author-defined arguments, or, if desired, the user can submit inquiries that will result in diverse interpretive frameworks.

As part of this database, it is also recommended that we develop reflexive multimodal techniques. This process was begun with *The Congo Prototype*, yet it can be further enhanced with the inclusion of multiple reflexive moments as recorded in text, audio, video, and still photographs.

Further, it was suggested that video segments should be edited to their most relevant moments, yet there should be a means for the user to view additional media as desired. One possible way to address this issue could occur by borrowing techniques from several video applications, including the “play around” tool. With this feature, the user can view the edited sequence, or specify the amount of footage to be viewed around a given cut (frames, seconds, or minutes). In this way, we might achieve greater reflexivity by demonstrating the ways in which the document has been constructed.

Once these various ethnographies have been created along the lines as prescribed above, then we might explore methods to connect the various works. We might, for example, reconsider what constitutes the borders of a given study. In this way, we could link numerous studies together at key junctures to highlight related cultural phenomenon. This, it seems, could result in a degree of multivocality, not within a single work, but across a network of studies.

Each of these suggestions can be addressed in practical ways with the current technology. The second area of emphasis, however, may be more difficult to achieve, due to the deeply engrained notion of what constitutes academic argument.

Theoretical

The current study takes advantage of changing notions of what constitutes scholarship. In today's media saturated world, it seems reasonable to extend the boundaries of scholarship beyond print to include film, performance, and hypertext. With the proliferation of electronic academic journals, this change is beginning to occur; however, it may be that we must take even more radical steps toward inclusion.

Despite the appearance of new works, most of these tend to follow traditional conventions in which claims are followed by specific evidence. It is worth exploring alternative models such as David Kolb's (1994) *Socrates in the Labyrinth* and Jay Ruby's (2005) *Rebekah and Sophie*. Through this kind of experimentation, new approaches that could provide practical and theoretical insights will surface.

As a final note, it seems that the world around us has become saturated with ethnographic-like texts. One need engage in only a simple search within *Youtube* or *Vimeo* to find numerous works that have been developed by individuals who are not

necessarily part of the academy. Future scholarship might engage these texts to determine their potential contributions. The ramifications to the academy are profound, both theoretically and, perhaps, economically. Current scholarly practices place a premium on the production of texts, which, to most in the academic community, require skills and knowledge beyond what is possible within more popular discourse. This is evidenced by the relatively few "independent scholars" who publish in our better-known academic publications. Additionally, when one considers that publications often result in tenure, promotion, and retention, it becomes clear that there are significant reasons, beyond the production of knowledge, for the current monopoly on academic publication. At the same time, as a discipline that is committed to empowerment, it seems reasonable that we extend our notions of scholarship in ways that might promote dialogue within our own discipline and include groups that may offer important contributions. It is not suggested that we abandon the theoretical tools and techniques associated with the field, only that we explore the relevance of these new and emerging works.

Final Thoughts: Intractable Issues, Reflexivity, and Limitations

Just as a research project evolves, so too does the researcher. Over the course of this study, my own attitudes regarding ethnographic research and its eventual representation within a hypertext format has dramatically shifted. In this final section, I explain some of these changes and describe, in a more reflexive manner, how they have reshaped my attitudes regarding the application of the technology.

Two years ago, I left my dissertation prospectus meeting with a sense of optimism. I felt that I had adequately demonstrated how one could alter ethnographic representation through hypertext, discussion forums, digital video, animation, and virtual realities. My

head was spinning with ideas. As I looked upon the faces of my mentors, they too seemed enthusiastic; however, in retrospect, these looks may just as easily have been confusion.

In the parking lot of our departmental offices, I asked my chairperson if he thought my ideas seemed reasonable. He knowingly explained to me that I might, in fact, uncover new possibilities, but more than likely, I would learn that certain representational struggles are here to stay. In either case, he suggested, the process would be a valuable learning experience that would contribute to my development as a scholar.

During these past two years, my chairperson's prophetic words have been realized. Despite my illusions of grandeur, I no longer believe that all ethnographic complexities can be "solved" through technological means. In fact, I have now decided that hypertext offers relatively few completely unique solutions, and instead, should be viewed as merely a *different* mode of representation, one that will continue to require us to struggle with the same sorts of intractable issues that are associated with any representational format. In the paragraphs that follow, some of these intractable issues are discussed in relationship to early mistakes that were made in the construction of *The Congo Prototype*. Each of these issues has been listed under three broad categories: The Rhetorical Nature of Representation, The Value of the Researcher, and The Politics of Publishing.

Issue 1: The Rhetorical Nature of Representation

Early versions of *The Congo Prototype* included numerous media types: images from the galleries, ambient sound as recorded during data collection, and video that had been captured from my perspective as I traversed the halls of the museum. These early iterations of the project grew out of a common misconception. On an intellectual level, I

understood that it is impossible to replicate lived experience no matter how complex the mediated representation. At the same time, however, as a technological enthusiast, I still refused to let go of the notion that I might be able to create something that came very close to it.

As I continued to operate under this misguided assumption, I developed more and more complex simulations of what I believed conveyed a sense of my experience. Layer after layer of multimedia data was added to the project, but, despite my best efforts, each version of the prototype fell short of my expectations. In the end, I relented and, as demonstrated by Clifford and Marcus (1986), began to view the entire project as a rhetorical activity in which reality is constantly co-created by the researcher and the user. This realization had a profound effect on my future designs. No longer did I seek to replicate my lived experience, and instead, I gravitated toward the notion that it would be more important to explicate my own subjectivity through the inclusion of multiple media formats than it would ever be to create an unattainable objectivity.

For those of us who work in visual mediums, this theoretical insight can be somewhat challenging to grasp. No matter how many theoretical arguments are read to the contrary, the fact that the raw material from the field bears such a striking resemblance to the material world can oftentimes blur the boundaries between what one perceives as "reality" and its eventual representation. This confusion is further complicated with the inclusion of interactivity. As noted by Coover (2003), interactive media can be designed in such a way as to resemble the process of collecting data in the field—adding another level of realism. Yet despite the potential similarities, it is critical that multimedia projects be informed by the notion that no matter how realistic the virtual experience, it

will always exist as an interpretation. One cannot avoid the fact that each choice we make from the selection of topic, collection of data, and up and through the construction of the interactive experience will always be a reflection of the researcher; objectivity continues to be an illusive and impossible dream. At the same time, just as has occurred with print-based ethnographies, an analysis of our own subjectivities can be a productive exercise in its own right.

One of the potentially useful innovations that grew out of the present project occurred because of this shifting perspective. Once I realized that a majority of the project would revolve around this notion of subjectivity, it became important to capture the constructedness of the document through new multimedia techniques. As a result, I included numerous video clips in which I analyzed how my own perspective had altered the contents and representation of the colonial narratives. Had I not struggled with this unsolvable dilemma in which I hoped to capture a "realistic" representation, this feature would not exist. In this sense, the struggle itself can produce interesting results in terms of the content and design of the eventual ethnography

Issue 2: The Value of the Researcher

A second related issue surfaced from an analysis of hyperfiction. Literary theorists often claim that hypertext technology makes it possible for the reader to construct new texts with each reading, many of which may not have been considered by the author (Landow, 1992). Early on, I became enamored with this notion. It seemed that an analogous concept might be applied to ethnographic works in which write-ups could be created by the reader as derived from the collected ethnographic data.

As I mulled over the practicality of this approach, I recalled a multimedia demonstration that I had witnessed several years ago. Researchers from the University of Southern California School of Cinema Arts built an interactive program that allowed students to edit the raw footage from classic films and cut it into different sequences. Not surprisingly, each of these re-edited scenes varied from one another in significant ways, resulting in meanings that diverged from the implied intent of the original filmmakers.

It seemed that it might be possible to create the same sort of experience for the user of *The Congo Prototype*. I originally envisioned a project in which all of the collected resources could be viewed, interpreted, and arranged in a unique order by the user. In this way, just as occurred with the USC film project, each reading could potentially result in a new representation. As an added benefit, the approach, I thought, might help to demonstrate the contingency of interpretation.

In retrospect, this idea seems somewhat ludicrous. One of the most important aspects of ethnographic research stems from the time spent in the field. It is not enough to mix media and create numerous "edits" as I had envisioned. The true value of ethnographic work results from an extended first-hand stay in the field, coupled with a supportable interpretation of that experience. If we ignore the value of the researcher, as had occurred with this preliminary design, a major component of the entire enterprise is lost.

Despite the fact that it is possible to create an experience in which the user controls the interpretation, this is not a desirable outcome. It seems that ethnographic hypertext writing represents a very specific form of hypertext. In the case of ethnographic works, it is important to prioritize the author's interpretation as the most valued aspect of any

study, despite the fact that medium itself has primarily been theorized as one that allows the burden of interpretation to shift to the user (Landow, 1992).

Issue 3: The Politics of "Publishing"

One of the benefits of electronic writing as described in this document can be found in the ways in which publishing is not limited to academic journals. One can, for example, produce important works that can be instantly accessed by millions of readers. For scholars, these characteristics offers numerous benefits, including the ability to publish audiovisual materials, instant feedback from an audience, efficient collaboration, and access to a much wider audience than would be possible with traditional academic outlets.

At the same time, the benefits of this new mode of publishing can oftentimes be overshadowed by potential pitfalls. When publishing on the World Wide Web, one runs the risk of placing research findings in the hands of individuals or groups who may utilize these materials in ways that run counter to the author's intent. Results, for example, could be misused by racist or sexist groups in ways that run counter to the core values upon which many of us in the discipline stand. In other words, new modes of publishing create unique problems that we have not traditionally faced.

As with the other intractable issues, problems associated with electronic publishing cannot simply be solved. There will never exist a means by which we can completely control these new modes of expression. To an extent, anyone can publish information to the World Wide Web. In some sense, the lack of control is exactly what makes these technologies so powerful. Yet each scholar will need to weigh the advantages of the technology against potential problems.

In the final analysis, despite my best efforts, this study has not "solved" any issues of representation. Hypertext, although a useful tool of expression, cannot replicate lived experience; cannot eliminate the need for a strong authorial presence; and, although an efficient mode of publishing, presents new challenges in which, to a degree, we relinquish control of data and findings. Yet beyond these limitations, these new technologies serve a very useful function. They allow us to rethink age-old problems and assess the ways in which we might best provide a positive impact upon the world in which we live.

This realization has altered my perspective on hypertext technology and ethnographic representation. My future scholarly efforts will continue to explore the medium of hypertext as a mode of representation; yet my emphasis has slowly shifted from the quest for an ideal medium toward greater attention to the ways in which the combination of media can best serve to represent other cultures and as a means to explore reflexive issues of self.

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